JVC

SERVICE MANUAL

CD RECEIVER

KD-SH99R

Detachable

MP3 *PLAYBACK*

COMPACT disc DIGITAL AUDIO TEXT

RDS EON
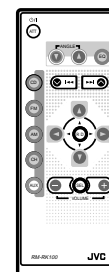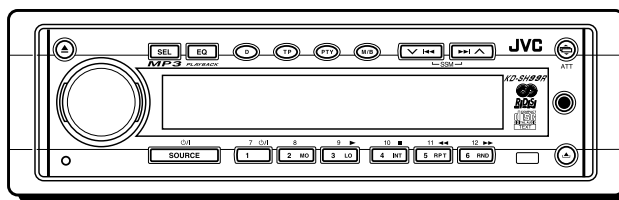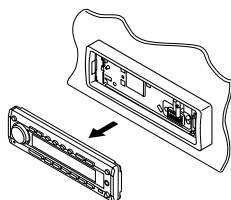
Area Suffix
E ------- Continental Europe
EX ----- Central Europe

MC-Service

Contents

No.49645
Jun. 2001

Safety precaution

⚠ *CAUTION* **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

⚠ *CAUTION* **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

Preventing static electricity

1.Grounding to prevent damage by static electricity
Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

## 2.About the earth processing for the destruction prevention by static electricity
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench
Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself
Use an anti-static wrist strap to release any static electricity built up in your body.

(caption)
Anti-static wrist strap

1MΩ

Conductive material
(conductive sheet) or iron plate
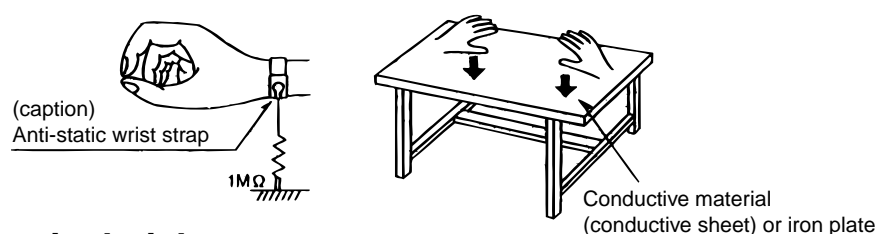
3. Handling the optical pickup
1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)

2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.
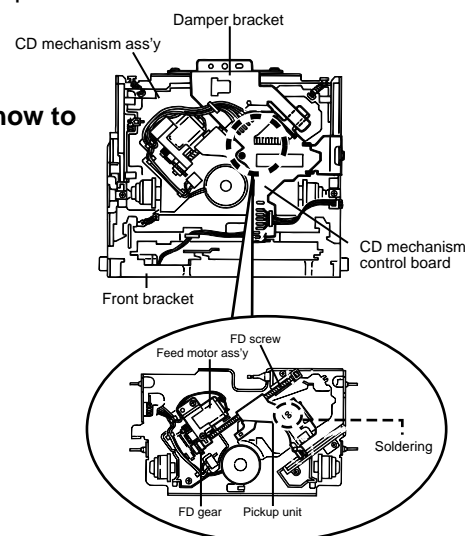
4.Handling the traverse unit (optical pickup)
1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.

3. Handle the flexible cable carefully as it may break when subjected to strong force.

4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Attention when traverse unit is decomposed

*Please refer to "Disassembly method" in the text for pick-up and how to detach the substrate.

1.Solder is put up before the card wire is removed from connector on the CD substrate as shown in Figure.
 (When the wire is removed without putting up solder, the CD pick-up assembly might destroy.)
2.Please remove solder after connecting the card wire with when you install picking up in the substrate.

Damper bracket
CD mechanism ass'y
CD mechanism control board
Front bracket

FD screw
Feed motor ass'y
Soldering
FD gear   Pickup unit

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Disassembly method

■ Removing the front panel assembly
(See Fig.1)

1. Press the release button in the lower right part of the front panel assembly to unlock.

2. Remove the front panel assembly in the direction of the arrow.

Front panel assembly

Release button

Fig.1
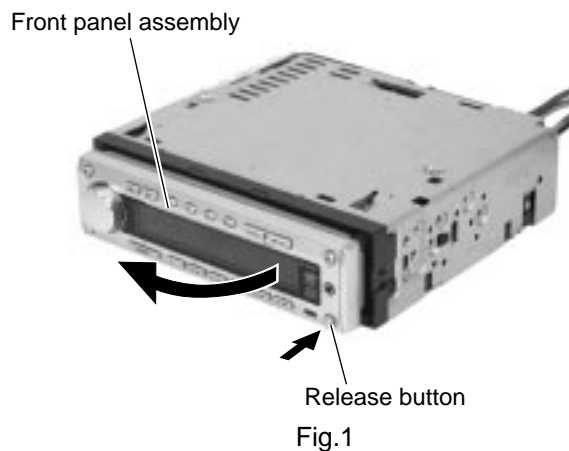
■ Removing the top chassis
(See Fig.2 to 6)

· Turn on power.

1. Press the eject button in the upper left part of the front panel assembly to move the assembly as shown in Fig.2 and turn off power.

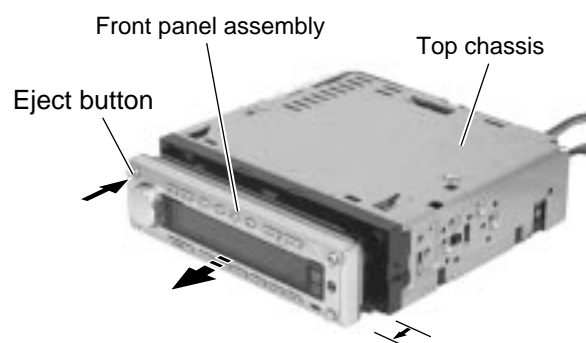2. Remove the two screws **A** on the upper side of the body.

Front panel assembly   Top chassis

Eject button

Fig.2

Top chassis

A — — A

Front panel assembly
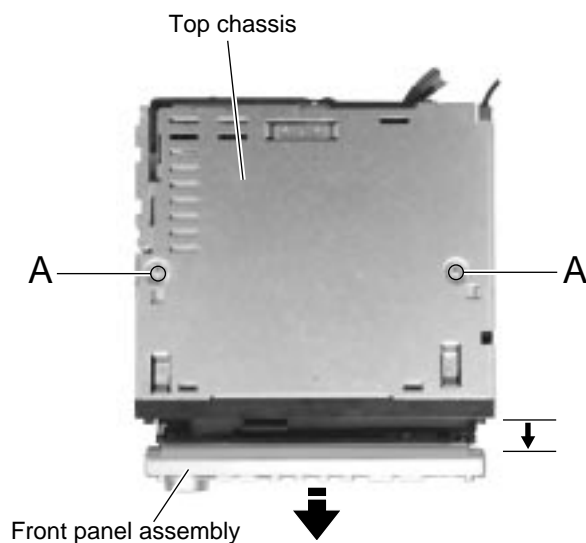
Fig.3

3. Remove the three screws **B** on both sides of the body.

4. Remove the screw **C** and the three screws **D** on the left side of the body.

5. Remove the two screws **E** and the screw **F** on the back of the body.

6. Move the top chassis upward and remove it with the CD mechanism assembly. The connector on the CD mechanism assembly is disconnected from connector CN601 on the main board.

Top chassis

B   B

Fig.4

C   Top chassis

Heat sink   D   B

Fig.5

E   F

Fig.6

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■Removing the CD mechanism assembly
(See Fig.7)

· Prior to performing the following procedure, remove the top chassis.
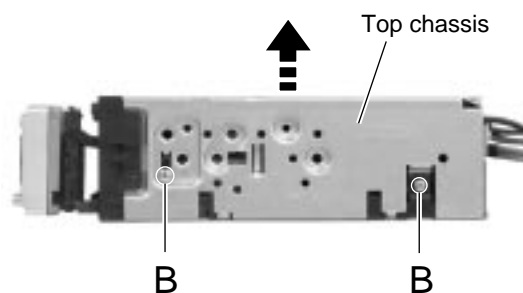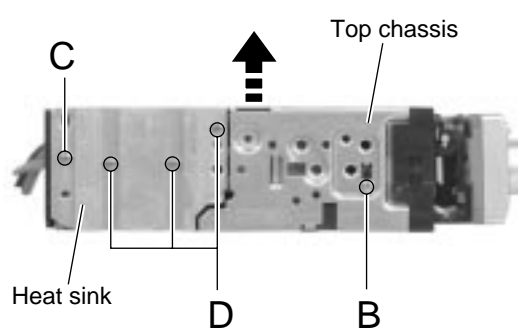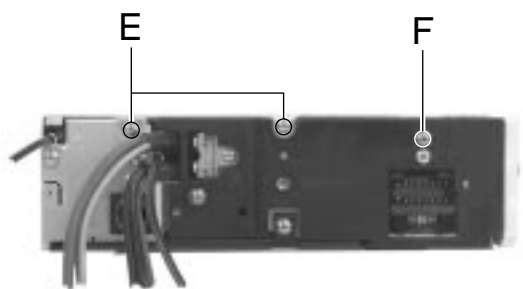
1. Remove the three screws **G** inside the top chassis and remove the CD mechanisma ssembly.
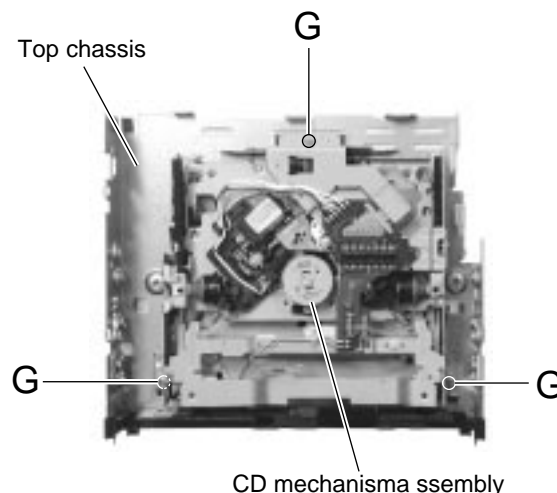
■Removing the motor assembly
(See Fig.8 to 10)

· Prior to performing the following procedure, remove the top chassis.

1. Disconnect the wire from connector CN703 on the main board.

2. Remove the motor bracket and the spring attached to the arm braket assembly (R).

3. Remove the two screws **H** attaching the motor bracket.

4. Remove the washer attaching the clutch assembly and pull out the clutch assembly from the shaft.

5. Remove the two screws **I** and the motor assembly from the motor bracket.

Top chassis

G

G

G

CD mechanisma ssembly

Fig.7

Spring   Motor braket

Arm braket assembly (R)

Motor assembly

Fig.8

Motor braket

Clutch assembly

Motor assembly

R

Washer

Fig.10

Main board

CN601

CN703

H

Motor braket

H
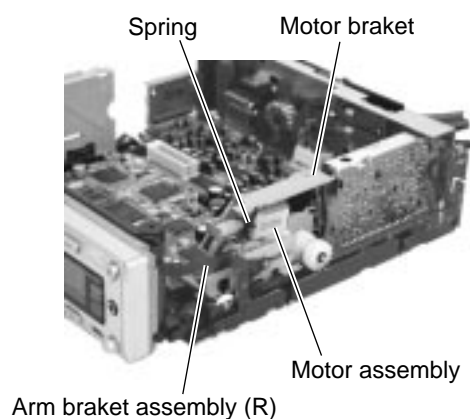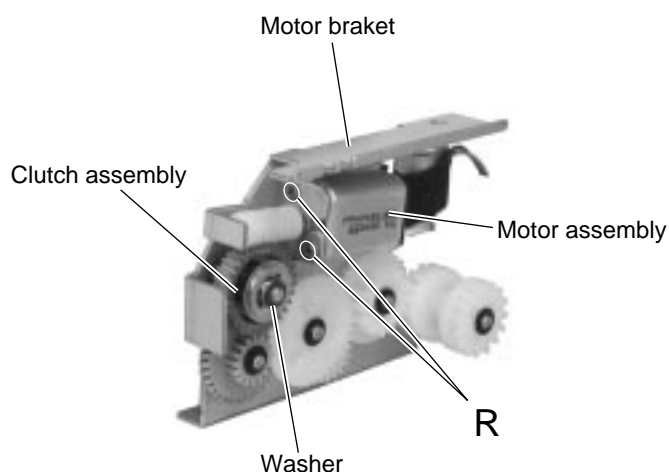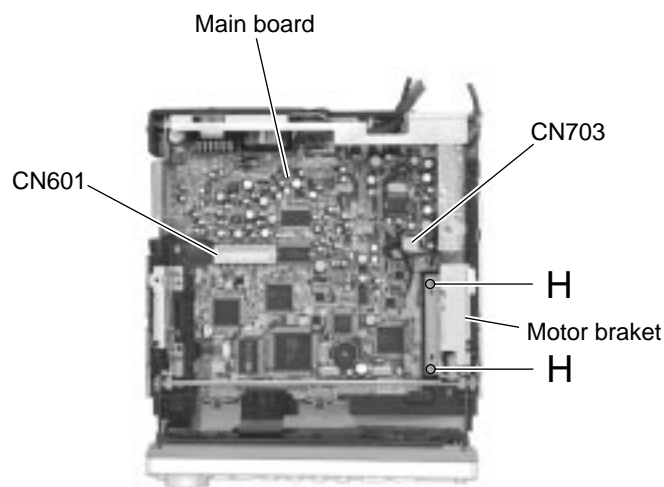
Fig.9

■Removing the main board
(See Fig.11 to 15)

・ Prior to performing the following procedures, remove the top chassis and the motor bracket.

1. Disconnect the flexible wire from connector CN701 and CN702 on the main board respectively.

2. Move the front bracket backward until it stops.

3. Remove the four screws **J** attaching the arm brackets (L) and (R). Move the right and arm lefter brackets from the rod gear.

4. Remove the rod gear.

5. Remove the screw **K** attaching the rear panel to the bottom cover on the back of the body.

Fig.11

Fig.12

Fig.13

MC-Service
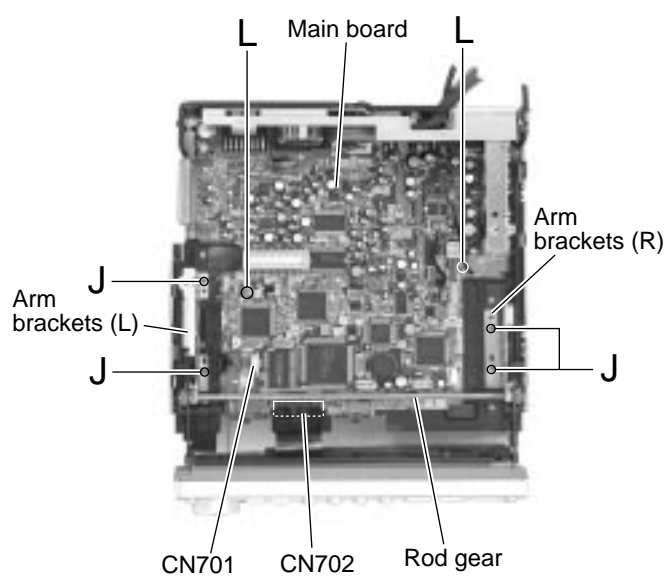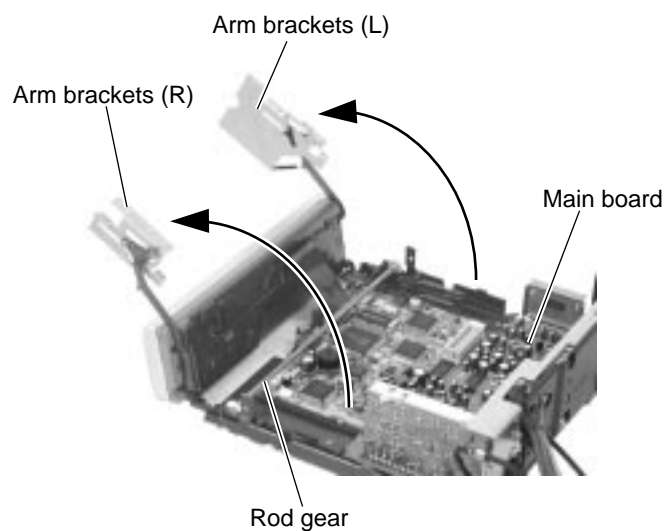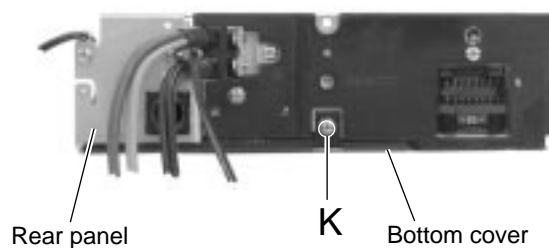
6. Remove the two screws **L** and move the main board backwards to release the two joints **a**. (The main board will be removed with the rear panel and the rear heat sink)

7. Remove the screw **M** and **N** attaching the rear heat sink.

8. Remove the three screws **O** and the screw **P** attaching the rear panel. Remove the main board.

Joint a

Joint a

Main board

Fig.14

O   M

P   N

Rear panel

Rear heat sink

Fig.15

Bottom cover
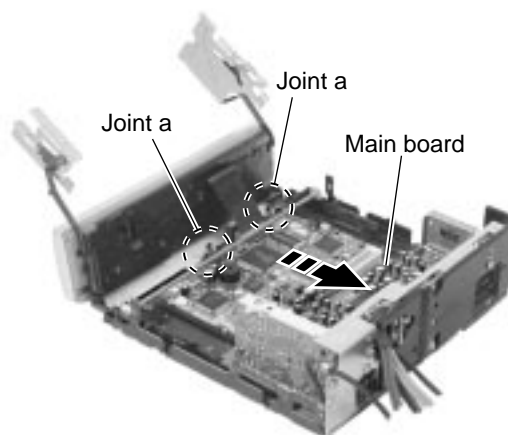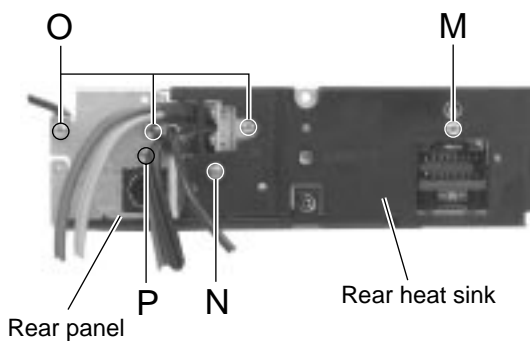
■ **Removing the lifter switch board**
(See Fig.16)

・ Prior to performing the following procedures, remove the top chassis, the motor bracket and the main board.

1. Remove the two screws **Q** attaching the lifter switch board.

Lifter switch board

Q
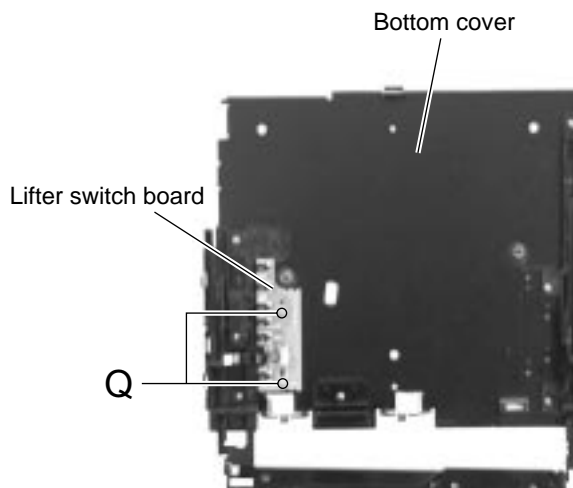
Fig.16

■ Removing the lifter board
(See Fig.17 to 23)

・ Prior to performing the following procedure, remove the top chassis assembly and the front panel assembly.

1. Disconnect the flexible wire from connector CN702 on the main board.

2. Remove the four screws **R** attaching the front bracket on both sides of the body.

3. Push the pin of the joint **c** on the front of the front bracket to release the lock lever.

Main board

CN702

Front bracket

Fig.17

Front bracket

R

Fig.18

Joint c

Lock lever

Front bracket

Fig.20

Front bracket

R

Fig.19

MC-Service
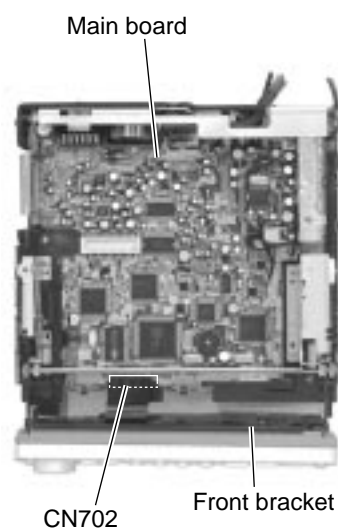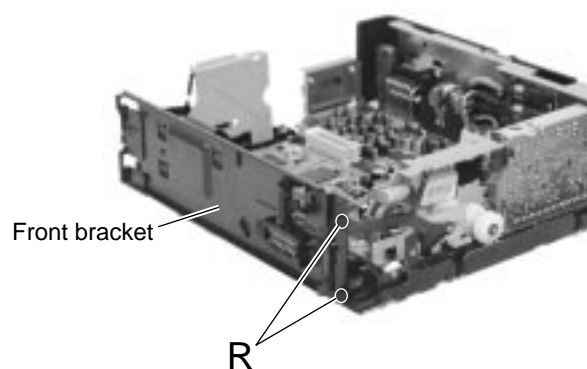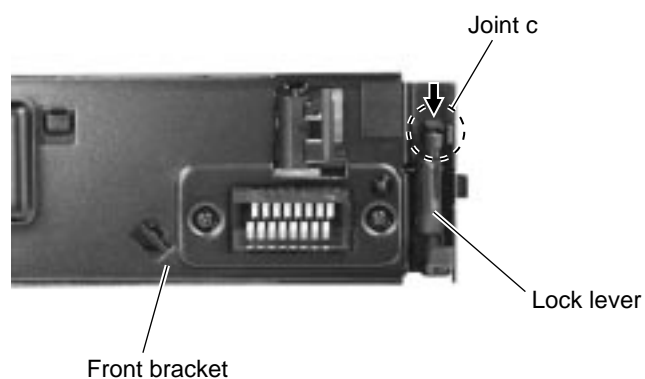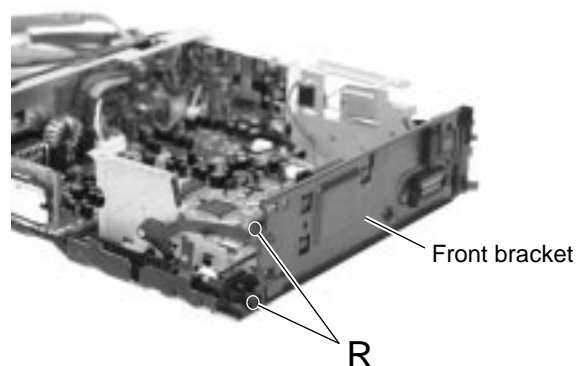
4. Remove the screw **S** attaching the lifter board cover in the rear of the front bracket.

5. Release the two joints **d** while pushing the front side. Move the lifter board cover inthe direction of the arrow and release the eight joints **e**.

6. Remove the two screws **T** attaching the lifter board on the front of the body.
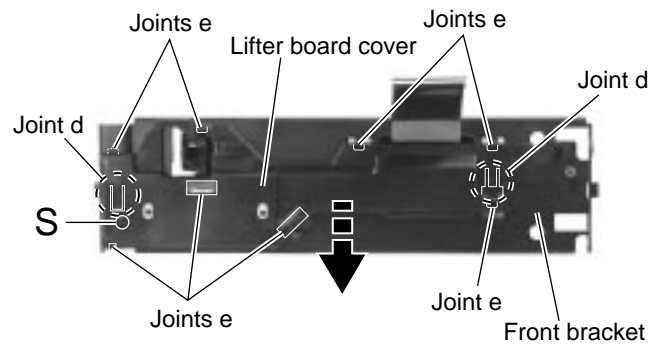
Fig.21
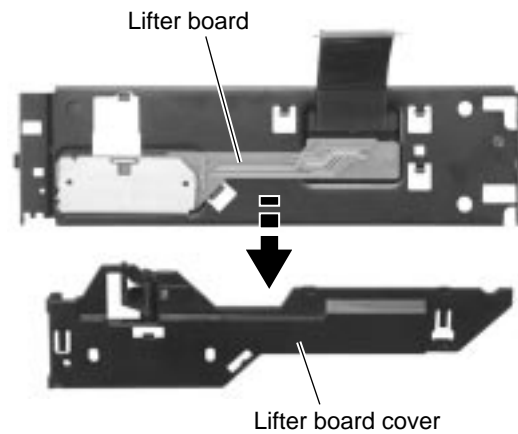
Fig.22
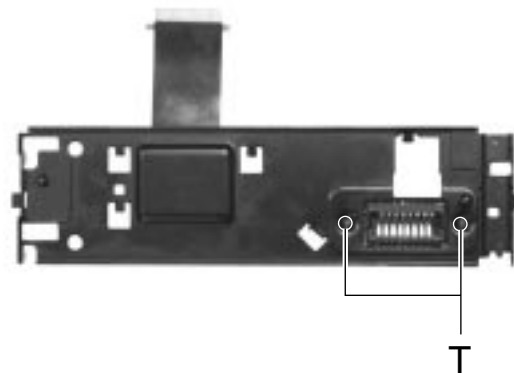
Fig.23

<Front panel assembly>

· Prior to performing the following procedure, remove the front panel assembly.

■ Removing the front board
(See Fig.24 and 25)

1. Remove the four screws **U** attaching the rear panel to the front panel assembly.

2. Release the eleven joints **f** of the front panel and the rear panel.

3. Disconnect the wire from connector CN503 on the front board.

4. If necessary, unsolder connector CN502 on the front board.
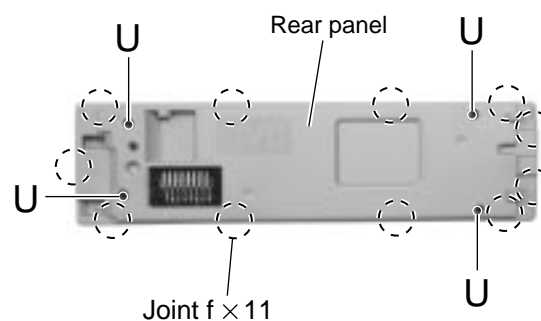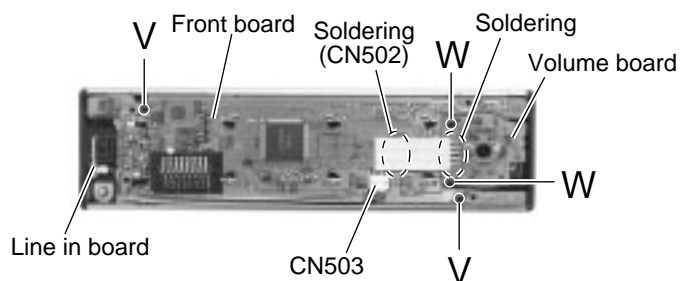
■ Removing the volume board
(See Fig.25 and 26)

· Prior to performing the following procedure, remove the rear panel.

1. Remove the two screws **W** attaching the volume board.

2. Disconnect the volume knob, ring lens and volume ring from the volume board.

3. If necessary, unsolder the volume board.
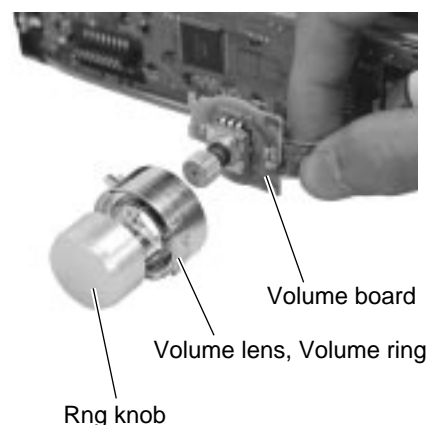
■ Removing the line in board
(See Fig.25 and 27)

· Prior to performing the following procedure, remove the rear panel.

1. Disconnect the wire from connector CN503 on the front board.

2. Pull out the line in board from the front panel assembly.

Rear panel, U, Joint f × 11
Fig.24

Front board, Soldering (CN502), Soldering, Volume board, Line in board, CN503, W, V
Fig.25

Volume board, Volume lens, Volume ring, Rng knob
Fig.26

Line in board
Fig.25

MC-Service

<CD mechanism section>
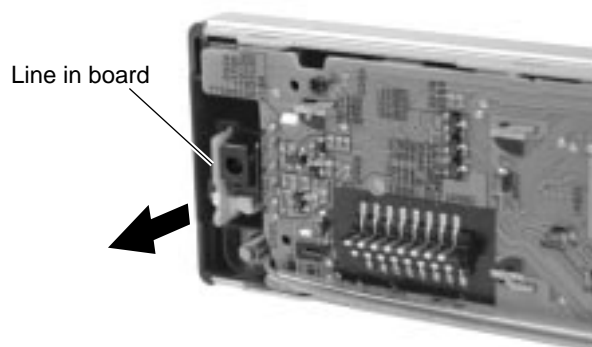
■Removing the CD mechanism control board (See Fig.1 and 2)

1. Unsolder the part **a** and **b** on the CD mechanism control board.

2. Remove the stator fixing the CD mechanism control board and the damper bracket (To remove the stator smoothly, pick up the center part).

3. Remove the screw **A** attaching the CD mechanism control board.

4. Remove the CD mechanism control board in the direction of the arrow while releasing it from the two damper bracket slots **d** and the front bracket slot **e**.

5. Disconnect the flexible wire from connector on the pickup unit.

> ATTENTION: Turn the FD gear in the direction of the arrow to move the entire pickup unit to the appropriate position where the flexible wire of the CD mechanism unit can be disconnected easily.
> (Refer to Fig.2)

CD mechanism assembly   Damper bracket

Front bracket   A b   CD mechanism control board   e

Fig.1

Pickup unit

Flexible wire

Shift the lock

FD gear
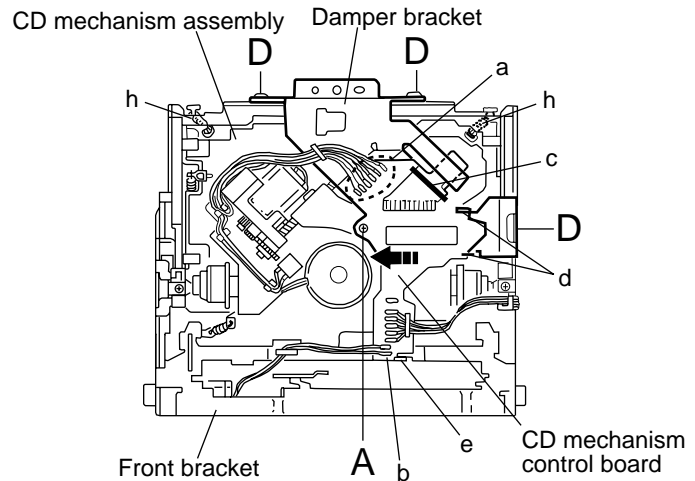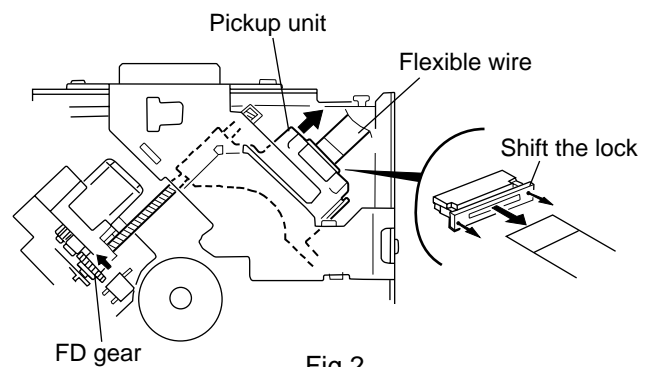
Fig.2

■Removing the loading motor
(See Fig.3 to 5)

・ Prior to performing the following procedure, remove the CD mechanism control board.

1. Remove the two springs **f** attaching the CD mechanism assembly and the front bracket.

2. Remove the two screws **B** and the front bracket while pulling the flame outward.

3. Remove the belt and the screw **C** from the loading motor.

CD mechanism control board

Loading motor   Front bracket

Fig.3

Loading motor

C

Belt

Fig.5

Pull outward   Front bracket   Pull outward
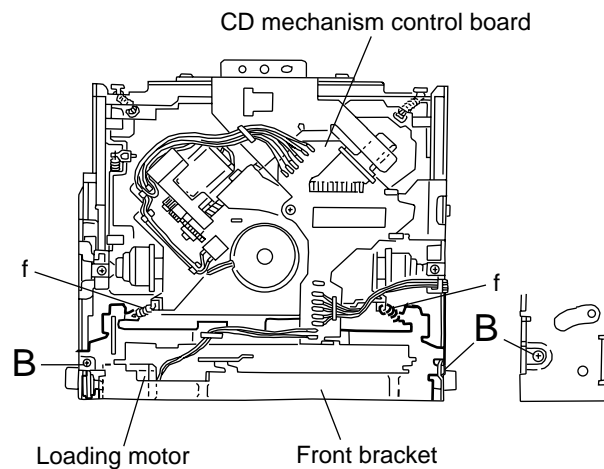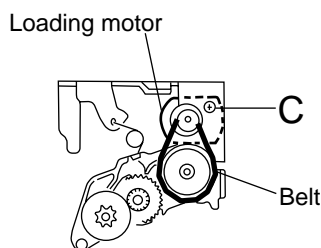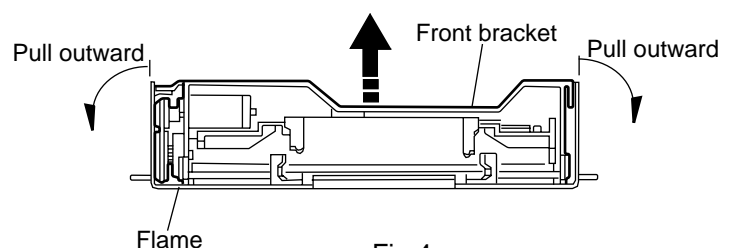
Flame   Fig.4

■ Removing the CD mechanism assembly (See Fig.1, 6 to 9)

・ Prior to performing the following procedure, remove the CD mechanism control board and the front bracket (loading motor).

1. Remove the three screws **D** and the damper bracket.

2. Raise the both sides fix arms and move the fix plates in the direction of the arrow to place the four shafts **g** as shown in Fig.8 and 9.

3. Remove the CD mechanism assembly and the two springs **h** attaching the flame.

4. Remove the two screws **E** and both sides rear damper brackets from the dampers. Detach the CD mechanism assembly from the left side to the right side.

ATTENTION: The CD mechanism assembly can be removed if only the rear damper bracket on the left side is removed.

CD mechanism assembly   Damper bracket

Front bracket   CD mechanism control board

Fig.1

CD mechanism assembly   Damper bracket

Flame

Fig.6

D

Fig.7

Rear damper bracket

Fix plate (L)   E   Fix arm (L)

Damper

Fig.8

Rear damper bracket

Fix arm (R)   E   Fix plate(R)

Damper   Fig.9

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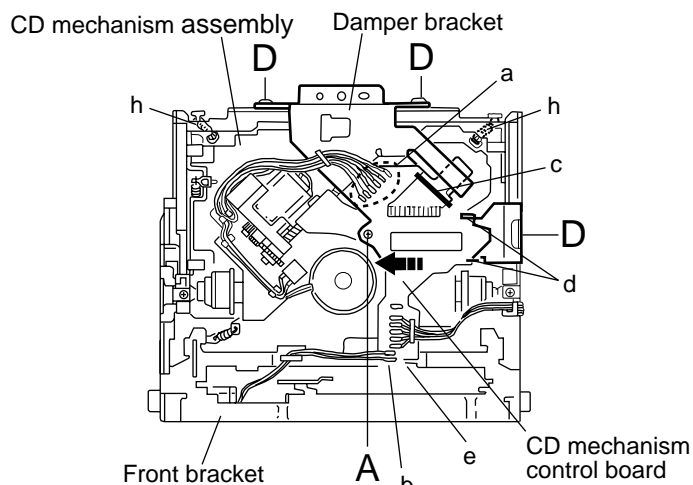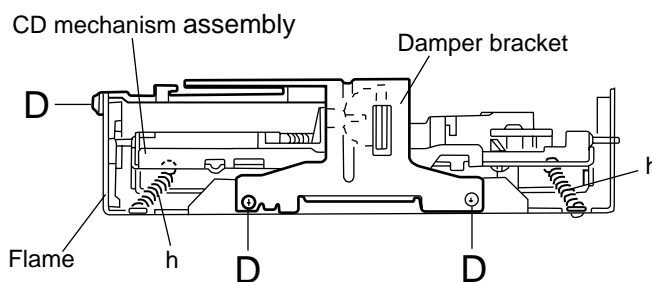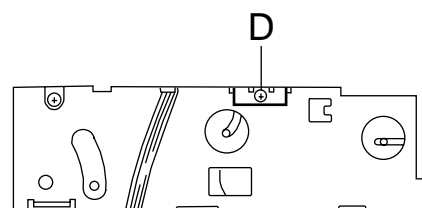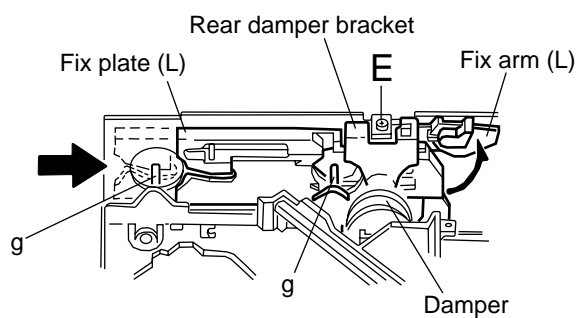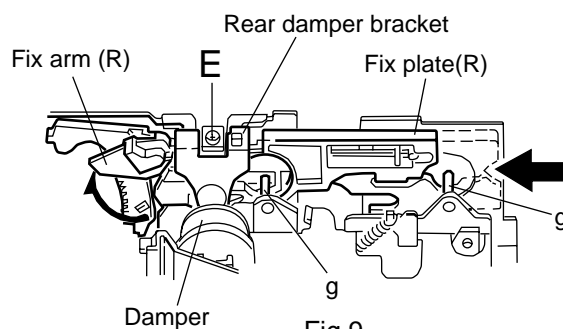
■Removing the feed motor assembly
(See Fig.10)

・Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor) and the CD mechanism assembly.

1. Remove the two screws **F** and the feed motor assembly.
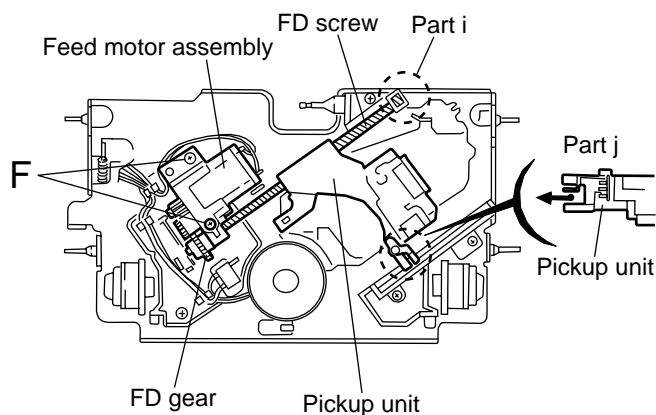
■Removing the pickup unit
(See Fig.10 and 11)

・Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor), the CD mechanism assembly and the feed motor assembly.

1. Detach the FD gear part of the pickup unit upward. Then remove the pickup unit while pulling out the part **i** of the FD screw.

ATTENTION: When reattaching the pickup unit, reattach the part **j** of the pickup unit, then the part **i** of the FD screw.
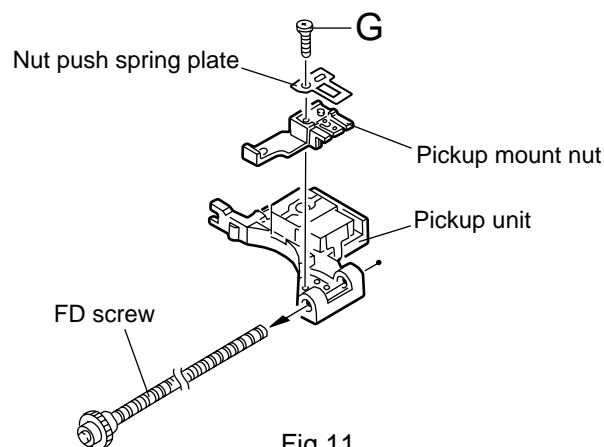
2. Remove the screw **G** attaching the nut push spring plate and the pickup mount nut from the pickup unit. Pull out the FD screw.

■Removing the spindle motor
(See Fig.12 and 13)

・Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor), the CD mechanism assembly and the feed motor assembly.

1. Turn up the CD mechanism assembly and remove the two springs **k** on both sides of the clamper arms. Open the clamper arm upward.

2. Turn the turn table, and remove the two screws **H** and the spindle motor.

Feed motor assembly   FD screw   Part i

Part j

F

Pickup unit

FD gear   Pickup unit

Fig.10

G

Nut push spring plate

Pickup mount nut

Pickup unit

FD screw

Fig.11

k   k

Fig.12

Spindle motor   H

H
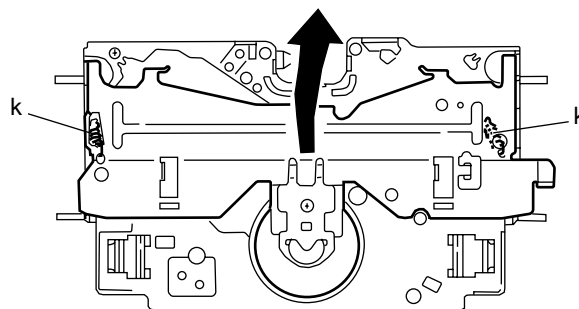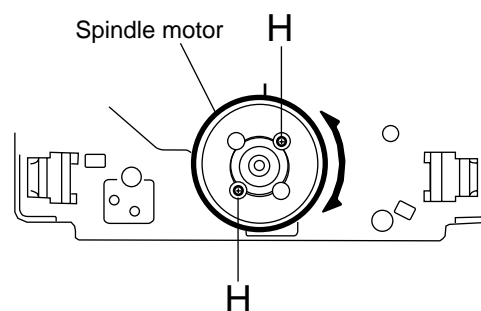
Fig.13

Adjustment method

■ Test instruments required for adjustment
1. Digital oscilloscope (100MHz)
2. AM Standard signal generator
3. FM Standard signal generator
4. Stereo modulator
5. Electric voltmeter
6. Digital tester
7. Tracking offset meter
8. Test Disc   JVC :CTS-1000
9. Extension cable for check
   EXTGS004-26P×1

■ Standard volume position
Balance and Bass &Treble volume : Indication"0"
Loudness : OFF
BBE   : OFF

■ Frequency Band
FM   87.5MHz ~107.9MHz(with channel interval set to 200kHz)
FM   87.5MHz ~ 108.0 MHz(with channnel interval set to 50kHz)
AM   530kHz ~ 1710 kHz(with channel interval set to 10kHz)
AM   531 kHz ~ 1602 kHz(with channel interval set to 9 kHz)

■ Dummy load
Exclusive dummy load should be used for AM,and FM. For FM dummy load,there is a loss of 6dB between SSG output and antenna input.The loss of 6dB need not be considered since direct reading of figures are applied in this working standard.

■ Standard measuring conditions
Power supply voltage   DC14.4V(11 V to 16V allowance)
Load impedance   4Ω(4Ω to 8Ω allowance)
Line-Out Level/Impedance 4.0V/20kΩload(fuull scall)

■ How to connect the extension cable for adjusting

EXTLX003-20P

EXTGS004-26P

EXTLX003-20PC

EXTLX003-7P

EXTLX003-7PC

EXTLX003-2P

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KD-SH99R
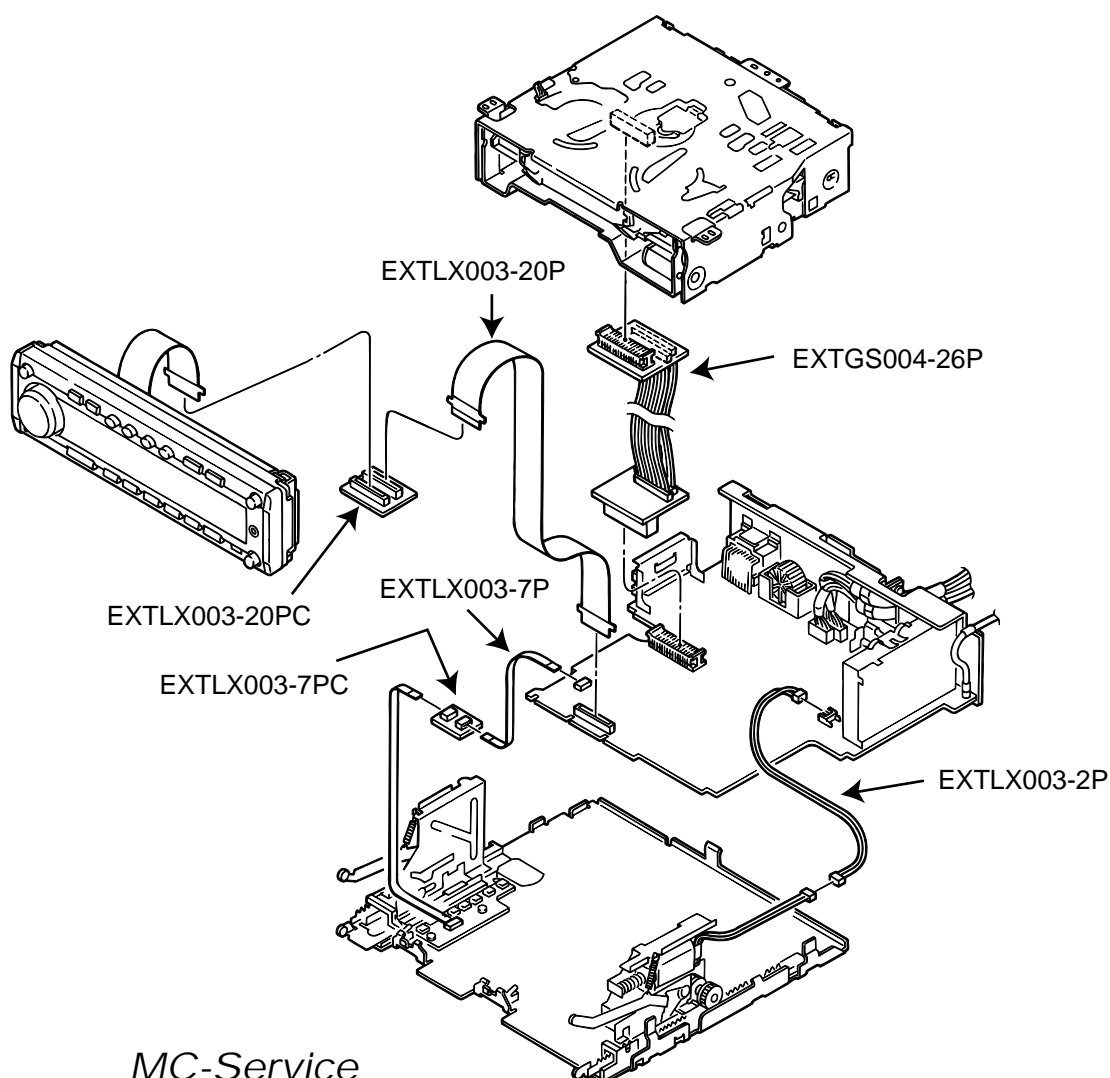
< Service mode >

The menu in the service mode can be switched with UP/DOWN.
The menu selected by the SEL button input is executed.

The ordinary mode

↓

"UP" + "DOWN" + VR counterclockwise rotation.

DEL EEPROM	EEPROM data all clear (changer is connected).
CH CH ERR	CD changer error career call (changer is connected).
DELL CH ERR	CD changer EEPROM clear (EEPROM career)
RUNNING CD	CD running mode (Do not use in service).
RUNNING SH	Running mode of front panel (Do not use in service).
DEL DATA	CD ERROR MECHA ERR error career deletion.
CD ADJ R	Self adjustment value call (It is a display switch with VR).
MEKACON WR	Sub-microcomputer writing (Do not use in service).
TEMP DATA	Temperature data call.
VERSION	Microcomputer version confirmation. The display changes in the up/down key. The main microcomputer : SH99 J203 The Sub-microcomputer : SH99S 122
CD ERROR	CD relation error career reading

< Error display >

Item	Content
DISC_ERROR_0	Others
DISC_ERROR_1	FOCUS NG
DISC_ERROR_2	Self adjustment NG
DISC_ERROR_3	CLV NG
DISC_ERROR_4	TOC reading NG or MP3 FILE CHECK NG
DISC_ERROR_5	BLANK DISC
EJECT_ERR	

MECHA ERR	Panel relation error career reading

<ERROR CODE of Panel mechanism>

Memory to EEPROM of 6 digits, 1st and 2nd digit are indicate the operation mode when occur the error, 3rd to 6th digit are indicate details of error.
LCD indication time is use lower 2digits of details of error.
This series is indicate **ERR XX** (XX is error code).
<ex.> When details of error is 0A0001 , it is indicate **ERR 01**, details of error is 0E0031 , it is **ERR 31**.
Switch is from this side sequentially PSW1, PSW2,.....PSW6.

Details of error	Error code
1. Error of door open (fault of PSW1)	
(1) Time out by PSW1 not changed	0A0001
(2) PSW1 change during waiting 300ms after open position detected	0A0002
2. Error of door close (fault of PSW6)	
(1) Time out by PSW6 not changed	0B0006
(2) PSW6 change during waiting 300ms after close position detected	0B0007
3. Error of shift to DETACH position (fault of PSW5)	
(1) Time out by PSW5 not changed to open side	0C0011
(2) Shift to open side, pass the DETACH position then detect ANGLE1	0C0012
(3) Time out by PSW5 not changed to close side	0C0013
(4) Shift to close side, pass the DETACH position then detect close position	0C0014
4. Error of angle adjustment	
4-1 Shift to ANGLE1 (fault of PSW4)	
(1) Time out by PSW4 not changed to shift for open side	0D0021
(2) Shift to open side, pass the ANGLE1 then detect ANGLE2	0D0022
(3) Time out by PSW4 not changed to shift for close side	0D0023
(4) Shift to close side, pass the ANGLE1 then detect DETACH position	0D0024
4-2 Shift to ANGLE2 (fault PSW3)	
(1) Time out by PSW3 not change to shift for open side	0E0031
(2) Shift to open side, pass the ANGLE2 then detect ANGLE3	0E0032
(3) Time out by PSW3 not changed to shift for close side	0E0033
(4) Shift to close side, pass the ANGLE2 then detect ANGLE1	0E0034
4-3 Shift to ANGLE3 (fault PSW2)	
(1) Time out by PSW2 not changed to shift for open side	0F0041
(2) Shift to open side, pass the ANGLE3 then detect OPEN position	0F0042
(3) Time out by PSW2 not changed for shift for close side	0F0043
(4) Shift to close side, pass the ANGLE3 then detect ANGLE2	0F0044
5. PSW fault condition at initialize	000000
When all PSW is checked immediately after RESET, and the state of SWITCH which cannot be originally is detected, it is displayed as ERR 00.	

MC-Service

Flow until reading TOC of CD/CD-R/CD-RW

① FEED RETURN ⟶ Becomes DRVMUTE=H and the output of the IC604 driver becomes possible. Picking up is moved to surroundings on the inside until becoming REST SW=L. Afterward, moves in the direction of outer again and stops in the place in which became REST SW=H.

② OFFSET SELF ADJUSTMENT ⟶ FOCUS OFFSET, TRACKING OFFSET, and RF OFFSET are done, and OFFSET of RF AMP in IC603 is corrected.

③ LASER ON ⟶

④ Pre SP KICK ⟶ 400ms turns the spindle motor before the focus search starts.

⑤ LENS UP ⟶ Lens UP of the pick is done. At this time, S character curve becomes about 2.0Vp-p by CTS-1000.

⑥ FOCUS ON ⟶ The down of the lens and FOCUS ONing are made.
Changes into CD-RW MODE, and serches for FOCUS in case of no FOCUS ON even if FOCUS search(UP DOWN) is done three times.

⑦ THE SPINDLE START ⟶ The spindle motor is rotated up to the number of necessary rotations.

⑧ TRAKING BALANCE ⟶ In the state of tracking OFF, do the self adjustment of wavy OFFSET of TE2 to 0. It takes time to adjust the one with a large gap of the traking balance of picking up. At this time, the racking error becomes about 2.8Vp-p by CTS-1000.

⑨ RF GAIN ⟶ In the state of traking OFF, do the self adjustment of the RF level of RF(TP601) to 1.0-1.2Vp-p. After adjusts,traking ON is done.

⑩ FOCUS GAIN ⟶ Do th eself adjustment of the gain intersection of the focus servo to 1.2kHz (300ms).

⑪ TRACKING ⟶ Do the self adjustment of the gain intersection of the focus servo to 1.2kHz. (300ms).

⑫ TOC READING ⟶ Time expands in DISC that the number of total tracks with CD-TEXT is a lot of.

⑬ 1Tr. HEAD ⟶ It is a head of 1Tr., and the reproduction begins.

Shape of waves when based on Vref(TP602)
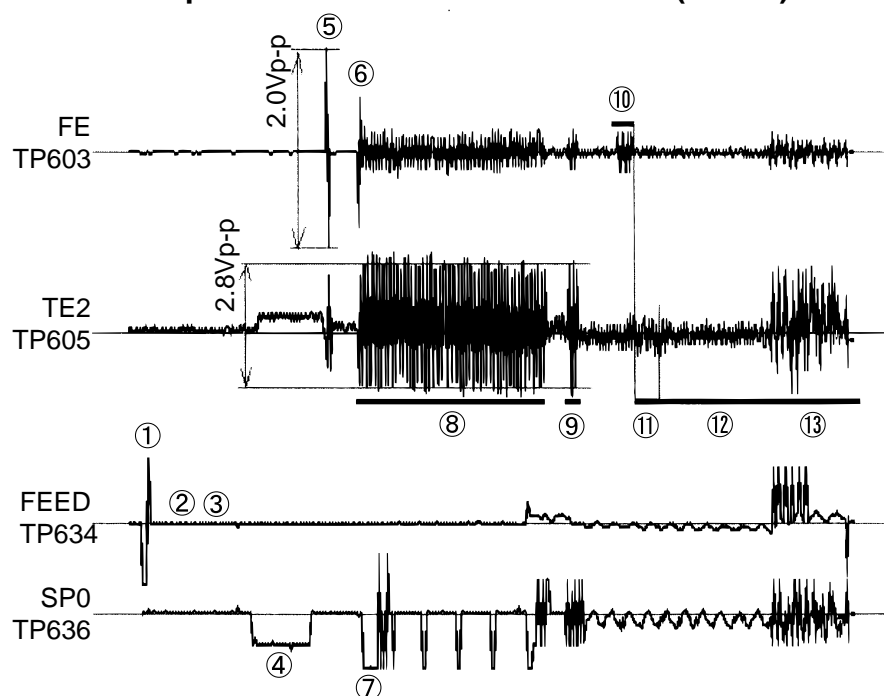
FE : Focus error signal
TE : T Tracking error signla
FEED : FEED deive signal
SPO : Spindle drive signal

■ **Adjustment part**

TRD   SPO

FOD

TE2

TE

FE

FEED

**Main board
(Forward side)**

RF

Vref

**Main board
(Reverse side)**

■ **RF shape of waves**

1.0～1.2Vp-p
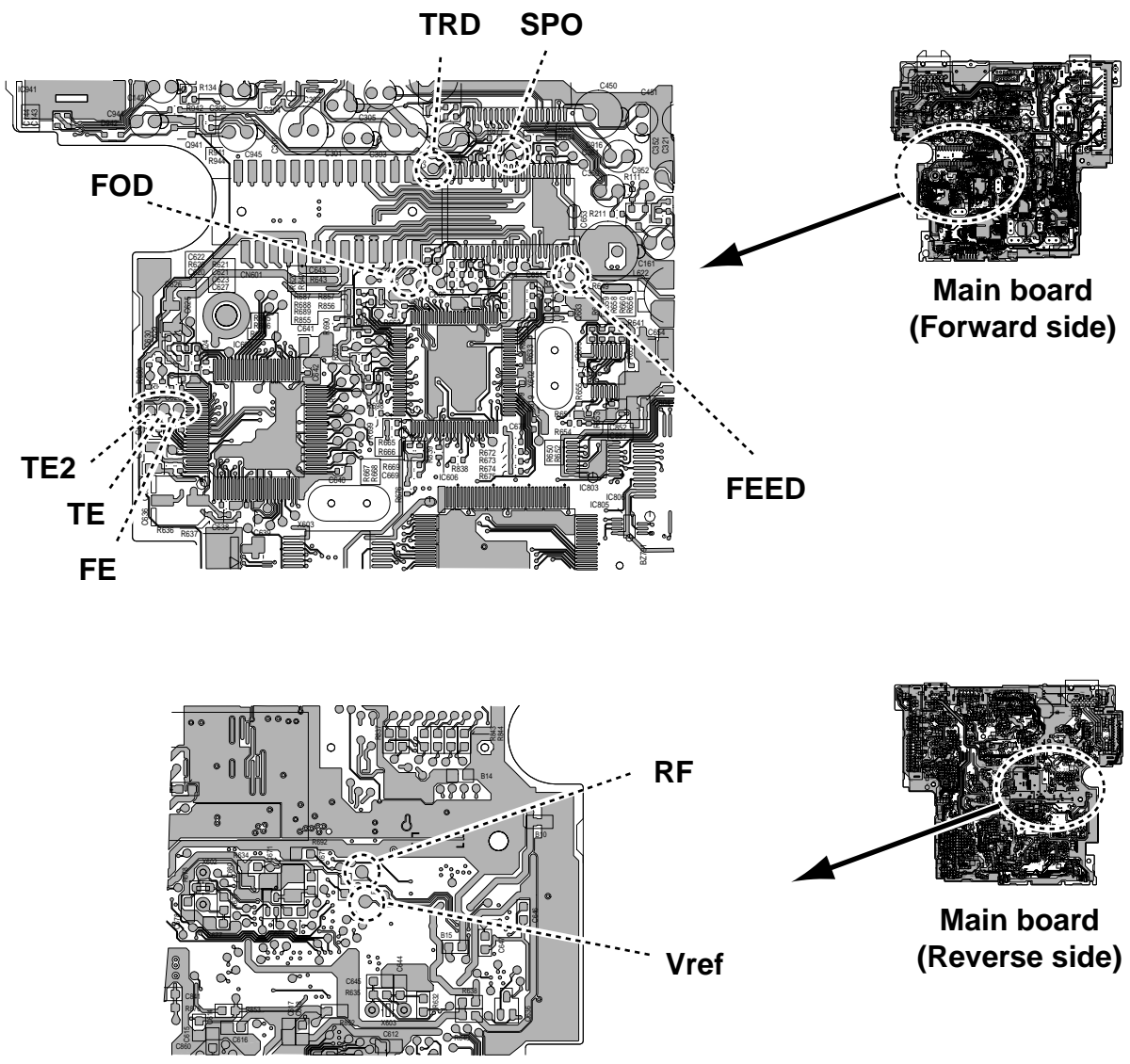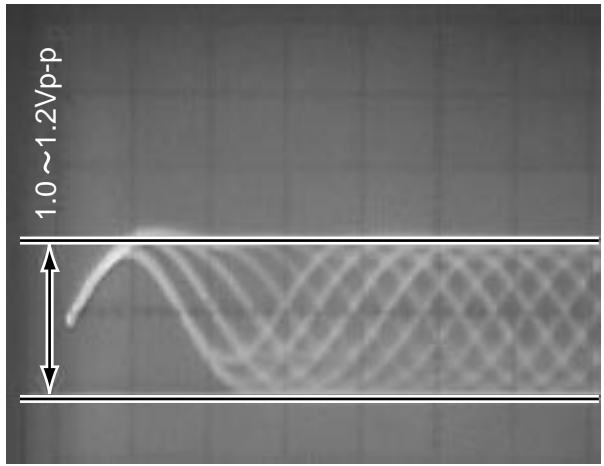
Maintenance of laser pickup

(1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode
When the life of the laser diode has expired, the following symptoms will appear.
  (1) The level of RF output (EFM output:ampli tude of eye pattern) will be low.

Is RF output 0.8 $\leqq$ — NO → Replace it.

YES ↓

O.K
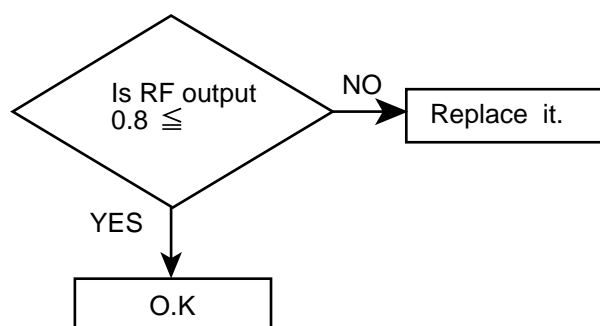
Replacement of laser pickup

(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally,the laser pickup may be damaged due to excessive current.

Turn off the power switch and,disconnect the power cord from the ac outlet.

↓

Replace the pickup with a normal one.(Refer to "Pickup Removal" on the previous page)

↓

Plug the power cord in,and turn the power on.
At this time,check that the laser emits for about 3seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.

↓

Play a disc.

↓

Check the eye-pattern at measures between TP601 and TP602.

↓

Finish.

Description of major ICs

■UPD784215AGC146(IC701):MAIN CPU

1.Pin layout

```
        75  ~   51
 76                 50

 ₹                   ₹

 100               26
 ●   1   ~   25
```

2.Block diagram

INTP2/NMI → PROGRAMMABEL INTERRUPT CONTROLLER	UART/IOE1 BAUD-RATE GENERATOR → RxD1/SI1, TxD1/SO1, ASCK1/SCK1
INTP0,INTP1 INTP3-INTP6	UART/IOE2 BAUD-RATE GENERATOR → RxD2/SI2, TxD2/SO2, ASCK2/SCK2
TI00, TI01, TO0 → TIMER/COUNTER (16 BITS)	CLOCKED SERIAL INTERFACE → SI0, SO0, SCK0
TI1, TO1 → TIMER/COUNTER1 (8 BITS)	BUS I/F → AD0-AD7, A0-A7, A8-A15, A16-A19, RD, WR, WAIT, ASTB
TI2, TO2 → TIMER/COUNTER2 (8 BITS)	
TI5/TO5 → TIMER/COUNTER5 (8 BITS)	
TI6/TO6 → TIMER/COUNTER6 (8 BITS)	
TI7/TO7 → TIMER/COUNTER7 (8 BITS)	PORT 0 → P00-P06
TI8/TO8 → TIMER/COUNTER8 (8 BITS)	PORT 1 → P10-P17
WATCH TIMER	PORT 2 → P20-P27
WATCHDOG TIMER	PORT 3 → P30-P37
RTP0-RTP7 → REAL-TIME OUTPUT PORT	PORT 4 → P40-P47
ANO0, ANO1 → D/A CONVERTER, AV REF1, AV SS	PORT 5 → P50-P57
ANI0-ANI7, AV REF0, AV DD, AV SS → A/D CONVERTER	PORT 6 → P60-P67
PCL → CLOCK OUTPUT CONTROL	PORT 7 → P70-P72
BUZ → BUZZER OUTPUT	PORT 8 → P80-P87
78K/IV CPU CORE, ROM, RAM	PORT 9 → P90-P95
	PORT 10 → P100-P103
	PORT 12 → P120-P127
	PORT 13 → P130,P131
	SYSTEM CONTROL → RESET, X1, X2, XT1, XT2, VDD, VSS, TEST

MC-Service

KD-SH99R

Pin No.	Symbol	I/O	Function
1	PREQ	O	Mechanism power supply ON/OFFdemand output("L":On demand)
2	AMUTE	O	Audio output MUTE control signal output ("L" :MUTE ON)
3		O	Non connected
4		O	Non connected
5		O	Non connected
6		O	Non connected
7	DIMMER-OUT	O	Unused output port
8	ANT PEM	O	Antenna remote output
9	VDD	-	5V connection
10	X2		Sub-clock 32.738MHz
11	X1	I	Sub-clock 32.738MHz
12	VSS	-	GND connection
13	XT2		Sub-clock 12.5MHz
14	XT1	I	Sub-clock 12.5MHz
15	RESET		Reset detection terminal
16		I	Non connected
17	BUS-INT	O	J-BUS signal interrupt input
18	PS2	I	POWER SAVE2 BACK UP synchronization. It is H input and stop mode.
19		I	Unused input port
20	RDS-SCK	I	RDS clock input
21	RDS-DA	I	RDS data input
22	REMOCON	I	Remote control signal input
23	AVDD	-	5V connction
24	AVREF0	-	5V connection
25	SD-ST	I	Station detector, stereo signal input. It is H and broadcasting station havingBroadcasting station,L:stereo
26	MRC DATA	I	MRC DATA input
27	KEY0	I	Key input 0
28	KEY1	I	Key input1
29	TEMP	I	Temperature data input for contrast correction
30	LEVEL	I	Level meter input
31	SQ	I	S.QUALITY level input
32	S.METER	I	S.METER level input
33	AVSS	-	GND connection
34	INLOCK	O	The LOCK detection output. At LOCK:H
35	NC	O	Unused output port
36	AVREF	-	5V connection
37	BUS-SI	I	J-BUS data input
38	BUS-SO	O	J-BUS data output
39	BUS-SCK	I/O	J-BUS clock I/O
40	(STAGE)	I	H:L:Initialization port
41	LCD-DA	O	Data output to LCD driver
42	LCD-CL	O	Clock output to LCD driver
43	LCD-CE	O	Chipenable output to LCD driver
44	BUZZER	O	Buzzer output
45	EPDAI	I	Communication data input of 12C
46	EPDAD	O	Communication data input of 12C
47	EPCLK	O	Communication data input of 12C
48	BUS-I/O	O	The J-BUS I/O switch output. When outputting :H,When inputting :L
49	PM0	O	Panel close side motor control signal output
50	PM1	O	Panel opening side motor control signal output

UPD784215AGC146(2/2)

Pin No.	Symbol	I/O	Function
51		O	Non connected
52		O	Non connected
53		O	Non connected
54	DETACH	I	The detach signal input. It is L of 200ms or more and operation mode. It is H and POWER SAVE.
55	VCR CONT	O	Signal output for VCR control
56	PNL SW1	I	Panel position detection switch one signal input.
57	PNL SW2	I	Panel position detection switch two signal input.
58	PNL SW3	I	Panel position detection switch three signal input.
59	PNL SW4	I	Panel position detection switch four signal input.
60	PNL SW5	I	Panel position detection switch five signal input.
61	PNL SW6	I	Panel position detection switch six signal input
62	AFCK	O	The Af check output. When you check AF:L.
63	SEEK/STOP	O	The auto seek stop switch output. At SEEK:H, STOP:L.
64	S MUTE	O	Software mute output for CF switch noise.
65	FM/AM	O	FM and the AM switch output. At FM:H,At AM:L
66	PLL-CE	O	CE output for IC control for PLL.
67	PLL-DO	O	Data output for IC control for PLL.
68	PLL-CLK	O	Clock output for IC control for PLL.
69	PLL-DI	I	Data input for IC control for PLL.
70	TEL-MUTE	I	Telephone ,ute detection input.
71	AMP KILL	O	POWER-AMP, ON/OFF switch output. H:OFF
72	VSS		GND connection
73	DIMMER-IN	I	Dimmer detection input. L:Dimmer ON
74	PS1	I	At POWER SAVE of POWER SAVE1.ACC and synchronization:L. When operating :H.
75	POWER	O	The POWER ON/OFF switch output. At the time of the POWER ON:H.
76	CD-ON	O	The CD power supply control signal output. At CD:H.
77	MUTE	O	The mute output. At the time of the MUTE ON:L.
78	W-LPF1	O	Sub woofer cutoff frequency control output 1
79	W-LPF2	O	Sub woofer cutoff frequency control output 2
80	W-MUTE	O	The mute output for the sub woofer. At the time of the MUTE ON:H.
81	VDD	O	5V connection.
82	VOL-DA	O	Data output for IC control for electronic volume.
83	VOL-CLK	O	Clock output for IC control electronic volume.
84	CF-SEL	O	Signal output for FM belt region filter switch.
85	PMKICK	O	Signal output for panel motor kick
86	EMPH	O	The CD emphasis output. When turning.At On:H.
87		O	Non connected
88	VOL-1	I	Pulse which rotation volume pulse signal inputs, and becomes judgment of change actually.
89	VOL-2	I	rotation volume pulse signal input
90	(J/R)	I	H:J version and L:R version
91	BUCK	O	Non connected
92	CCE	O	Non connected
93	LSI RST	O	CDLSI reset signal output
94	TEST		GND connection
95		O	Non connected
96		O	Non connected
97		O	Non connected
98		O	Non connected
99	(DISC SEL)	O	Non connected
100	SW1	I	Panel SW1

■UPD63711AGC(IC603):RF Servo amp

1.Pin layout

```
○144 ~ 109
1          108
∫           ∫
36          73
   37 ~ 72
```
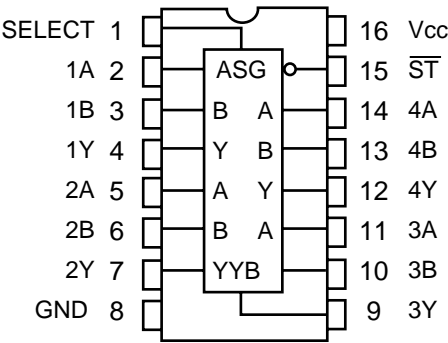
2.Pin function

UPD63711AGC(1/3)

Pin No.	Symbol	I/O	Function
1	VSSO	-	It is GND of the logic circuit.
2	ZRASO	O	It is RFOK signal output terminal.
3	ZCASO	I	Reset signal input terminal. (Active row)
4	ZCAS1	I	Command/parameter identification signal input terminal A0=L:STB active=Address register set. A0=H:STB active= Parameter set.
5	VSSO	I	The data strove signal input terminal. It is signal to de the latch in LSI as for the cereal data.
6	ZOE	I	The clock signal input terminal to input and output the cereal data. Input data from terminal SI is taken by standing up about this signal, and the cereal data from the terminal SO is output with go down.
7	ZUWE	O	The cereal data and the status signal are output.
8	ZLWE	I	Cereal data input terminal.
9	VSSO	I	The crystal oscillation control terminal. Please input the reset signal before stopping the crystal oscillation. Moreover, the crystal oscillation is steady and input the reset signal, please when moves from the state of the crystal oscillation stop to the ordinary mode. XTALEN=L:ordinary mode XTALEN=H:Crystal oscillation stop.
10	RA0	-	Positive power supply supply terminal to logic circuit.
11	RA1	-	Positive power supply supply terminal to D/A converter.
12	RA2	O	R-ch audio signal output terminal.
13	RA3	-	It is D/A converter GND.
14	RA4	-	The outside credit capacitor connection terminal for SCF regulator.
15	RA5	-	It is D/A converter GND.
16	RA6	O	L-ch audio signal output terminal.
17	RA7	-	Positive power supply supply terminal to D/A converter.
18	VDD0	O	Output terminal of right channel voice data. PWM output.
19	VSS0		
20	RA8	O	Left channel voice data audio output terminal. PWM output.
21	IO0		
22	IO1	-	Positive power supply supply terminal to crystal oscillation circuit.
23	IO2	O	Crystal departure pendulum connection terminal (Output)
24	IO3	I	Crystal departure pendulum connection terminal (Input)
25	IO4	-	It is GND of the crystal oscillation circuit.
26	IO5	-	Positive power supply supply terminal to logic circuit.
27	VSSO	O	The output terminal of priemphasis information in sub code Q. When the emphasis is added, high level is output. Polarity can be switched by the command. F6H LSB EP=0:Normal output EP=1:Reversing output.
28	IO6	O	Flag output terminal which shows that data under output is composed by data which cannot be corrected.(active high)
29	IO7	I	The cereal data input terminal to building DAC into. When DSP etc. are not connected with latter part, it should be short with the terminal DOUT.
30	IO8	O	It is an output terminal of the cereal voice data.
31	IO9	I	Cereal clock input terminal to building DAC into. The output voice data changes from DOUT by standing up about this clock. The system connected with latter part must take data by standing up about this signal.
32	IO10	O	The output voice data changes from DOUT by standing up about this clock.The system connected with latter part must take data by standing up about this signal.

UPD63711AGC(2/3)

Pin No.	Symbol	I/O	Function
33	IO11	I	LRCK signal input terminal to building DAC into.
34	IO12	O	Signal which distinguishes left channel/right channel of voice data output from DOUT.
35	IO13	O	Terminal (88.2kHz)(WDCK)of the output of the frequency signal twice defect detection output terminal(HOLD) LRCK HOLD/WDCK can be switched with the microcomputer.
36	VSSO	O	Terminal of output of data of Digital audio interface.
37	VDD1	-	It is GND of the logic circuit.
38	IO14	O	Buffer ring output terminal of oscillation.
39	IO15	I	The state of this terminal is output to Bit5 of the status output.
40	DREQ	-	Positive power supply supply terminal to logic circuit.
41	DRESP	O	It is EFM-synchronous detection signal.becomes high-level when the
42	IOP7	O	output of the synchronous pattern detection signal and the frame counter is corresponding by the EFM recovery part, and becomes a row level at the disagreement.
43	IOP6	O	Mirror output terminal. (MIRR).It is a frame synchronous signal of PLL system. The one that a basic frequency (44.1kHz)of the reading signal obtained in PLL system was divided makes almost equally to the synchronization(7.35kHz) of one frame. (WFCK)MIRR/WFCK can be switched with the microcomputer.
44	IOP5	O	the terminal for the monitor of the bit clock. When PLL is locked, the go down edge of the EFM signal and this signal locks.
45	IOP4	-	it is GND of the logic circuit.
46	IOP3	O	The output terminal which shows the C1 error correction result. Even
47	IOP2		go down of RFCK is fixed.
48	IOP1	O	It is an output terminal which shows the C2 error correction result. Even
49	IOP0		of RFCK is fixed.
50	HDBDIR		
51	DVDD	-	Positive power supply supply terminal to logic circuit.
52	PACK	O	It is PACK synchronous signal shows the head of packing.
53	TSO	O	It is a cereal output terminal of the CD-TEXT data.
54	TSI	I	It is a serial input terminal of the CD-TEXT control parameter.
55	TSCK_B	I	Cereal clock input terminal of CD-TEXT.
56	TSTB_B	I	Terminal of input of parameter strove signal of CD-TEXT.
57	DGND	-	It is GND of the logic circuit.
58	TEST0	I	It is a test terminal. Please connect with GND usually.
59	TEST1		
60	ATEST	O	It is a test terminal. Please make to the opening usually.
61	AGND	-	It is GND of an analog circuit.
62	FD	O	Focus drive output terminal.
63	TD	O	Tracking drive output terminal.
64	SD	O	Thread drive output terminal.
65	MD	O	Spindle drive output terminal.
66	DACO	O	It is DAC output terminal for the adjustment. A set value of CRAM7FH is output.
67	FBAL	O	It is DAC output terminal for the adjustment. A set value of CRAM7CH is output (built-in RF FE amplifier offeset).
68	TBAL	O	It is DAC output terminal for the adjustment. A set value of CRAM7DH is output.
69	TEVCA	O	It is DAC output terminal for the adjustment. A set value of CRAM7EH is output (built-in RF TE amplifier offset).
70	AVDD	-	It is a positive power supply supply terminal to an analog circuit.
71	EFM	O	EFM signal output terminal.
72	ASY	I	It is a standard voltage input terminal of the EFM comparator.
73	C3T	-	Capacitor connection terminal for 3T detection.
74	RFI	I	RF signal input terminal for EFM data generation.
75	AGCO	O	RF signal output terminal after gain is adjusted.
76	AGCI	I	Input terminal of RF-AGC amplifier.
77	RFO	O	Output terminal of RF saming amplifier.

KD-SH99R

Pin No.	Symbol	I/O	Function
78	EQ2	-	Equalizer part connection terminal of RF amplifier.
79	EQ1		
80	RF	I	Reversing input terminal of RF saming amplifier.
81	AGND	-	It is GND of an analog circuit.
82	A	I	Photo detector A input terminal.
83	C	I	Photo detector B input terminal.
84	B	I	Photo detector C input terminal.
85	D	I	Photo detector D input terminal.
86	F	I	Photo detector F input terminal.
87	E	I	Photo detector E input terminal.
88	AVDD	-	Positive power supply supply terminal to analog circuit.
89	REFOUT	O	reference potential output terminal.
90	FE	I	Focus make an error amplifier reversing input terminal.
91	FEO	O	Focus Allah amplifier output terminal.
92	TE	I	Tracking make an error amplifier reversing input terminal.
93	TEO	O	Tracking error amplifier output terminal.
94	TE2	O	Terminal to which tracking error after amplifies is output.
95	TEC	I	The tracking comparator input terminal. The tracking error signal which cuts the DC element is input. The tracking 0 crossing is detected by using this signal in LSI.
96	AGND	-	it is GND of an analog circuit.
97	PD	I	It is a terminal of the input of the detection signal of PD for the LD output monitor.
98	LD	O	LD control current output terminal.
99	PN	I	It is a control polarity set value of the APC circuit.
100	AVDD	-	Positive power supply supply terminal to analog circuit.

■ TC74VHC157FT-X(IC803):DAC SW

1.Pin lauout

```
SELECT 1 ┤         ├ 16  Vcc
   1A  2 ┤   ASG  o├ 15  ST
   1B  3 ┤  B   A  ├ 14  4A
   1Y  4 ┤  Y   B  ├ 13  4B
   2A  5 ┤  A   Y  ├ 12  4Y
   2B  6 ┤  B   A  ├ 11  3A
   2Y  7 ┤  YYB    ├ 10  3B
  GND  8 ┤         ├ 9   3Y
```
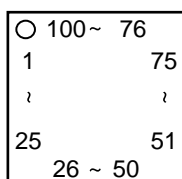
2.Pin function

INPUTS				OUTPUT
ST	SELECT	A	B	
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X:Don't Care

■UPD70F3033AC015(IC606):SUB CPU

1.Pin layout

```
○ 100 ~ 76
1          75
⌇          ⌇
25         51
   26 ~ 50
```
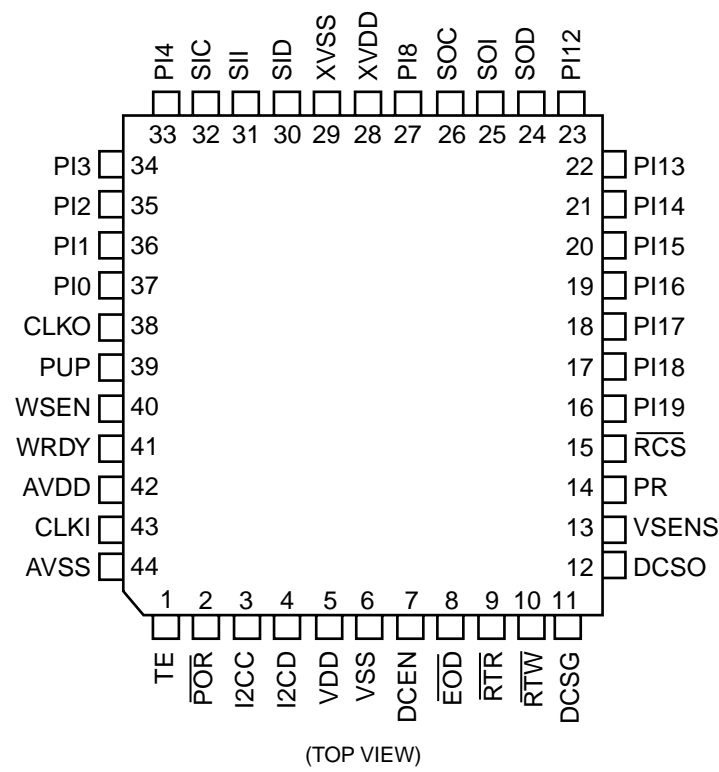
2.Pin function

UPD70F3033AC015(1/2)

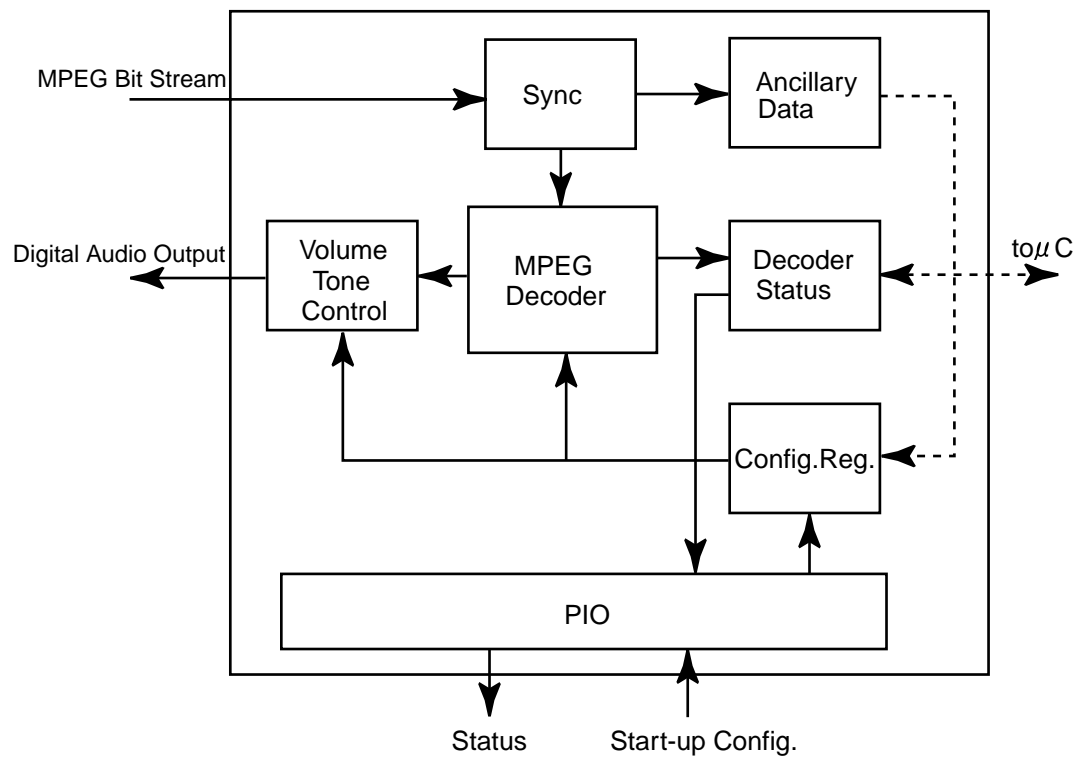| Pin No.	Symbol	I/O	Function
1	TSI	O	CD TEXT control parameter cereal output.
2	TSCK	O	CD TEXT control cereal clock output.
3	JBSO	O	JBUS cereal data output.
4	JBSI	I	JBUS cereal data input.
5	JBCK	I/O	Cereal clock I/O.
6	EVDD	-	5V(power supply for port for I/O).
7	EVSS	-	GND(GND for port for I/O).
8	TSTB	O	CD TEXT parameter strobe signal output.
9	XRESET	O	LSI reset output.
10	MIRR	I	MIRR signal input(H:Speculer).
11	AO	O	Command:/parameter:H switch signal output.
12	SO	I	DSP cereal data input.
13	SI	O	DSP cereal data input.
14	SCK	O	DSP cereal data clock output.
15	WSEN	O	Internal CD/DC operation of MP3 operation & beginning.
16	DSPRST	O	DSP RESET:L.
17	SWAIT	I	WAIT signal input from DECODER.
18	VPP	-	FLASH writing power supply.
19	SA4	O	DECODER address passing output.
20	SA5	O	DECODER address passing output.
21	SA6	O	DECODER address passing output.
22			(Non connected)
23	STB	O	DSP cereal data latch output.
24	DRVMUTE	O	Servo deriver MUTE control signal output(L:MUTE:ON)
25	LOAD1	O	Loading drive.
26	LOAD2	O	Loading drive.
27	SA0	O	DECODER address passing output.
28	SA1	O	DECODER address passing output.
29	SA2	O	DECODER address passing output.
30	SA3	O	DECODER address passing output.
31	RESET	I	Microcomputer reset terminal(L:Reset)
32	XT1	I	Sub-clock
33	XT2	-	Sub-clock
34		-	
35		-	The main clock crystal oscillation machine.
36		I	The main clock crystal oscillation machine(20MHz).
37	VSS	-	5V
38	VDD	-	GND
39	CLKOUT	O	Internal system clock output(Non connecte)
40	WR	O	DECODER data writing.
41	---	O	(Non connected)
42	---	O	(Non connected)
43	RD	O	DECODER data reading.
44	---	O	Address bus enable.
45	JBCONT	O	JBUS I/O switch.
46	PON	I	Mechanism power supply ON:L.
47	AD0	I/O	DECODER I/O data bus
48	AD1	I/O	DECODER I/O data bus
49	AD2	I/O	DECODER I/O data bus
50	AD3	I/O	DECODER I/O data bus

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Pin No.	Symbol	I/O	Function
51	AD4	I/O	DECODER I/O data bus.
52	AD5	I/O	DECODER I/O data bus.
53	AD6	I/O	DECODER I/O data bus.
54	AD7	I/O	DECODER I/O data bus.
55	BVDD	-	5V
56	BVSS	-	GND
57	---	O	(Non connected)
58	---	O	(Non connected)
59	---	O	(Non connected)
60	---	O	(Non connected)
61	---	O	(Non connected)
62	---	O	(Non connected)
63	---	O	(Non connected)
64	---	O	(Non connected)
65	MD	O	DAC mode control data.
66	MC	O	DAV mode control clock.
67	ML	O	DAC mode control latch.
68	MP3SEL	O	MP3/CD-DA switch SW L:Cd H:MP3
69	PREQ	O	Mechanism power supply ON/OFF demand output(L:ON demand)
70	AMUTE	O	Audio output MUTE control signal output(L:MUTE ON)
71	AVDD	-	5V(Power supply for AD converter)
72	AVSS	-	GND(GND for AD converter)
73	AVREF	-	5V(Standard voltage for AD converter)
74	PDET	I	BACKUP power supply detection(L:BACKUP power supply ON)
75	SW2	I	SW2 mechanism switch.
76	SW3	I	SW3 mechanism switch.
77	SW4	I	SW4 mechanism switch.
78	REST	I	Surroundings position detection switch(L:Surroundings)
79	RFOK	I	RFOK signal input.
80	REQ	I/O	Data demand.
81	EXP	I	H:Export L:For country 8cm CD.
82	ADIN0	I	Test key input 0 (A/D input)
83	ADIN1	I	Test key input (A/D input of one)
84	ADIN2	I	Test key input (A/D input of two)
85	ADIN3	I	Test key input (A/D input of three)
86	---	O	(Non connected)
87	CONT+B	I	LSI5V ON power supply control signal and JBUS control signal input.
88	SW1	I	SW1 mechanism switch.
89	PACK	I	PACK synchronous signal of CD-TEXT.
90	INT0	I	DECODER interrupt request.
91	INT1	I	DECODER interrupt request.
92	JBINT	I	J-BUS interrupt signal input.
93	TESTMODE	I	L: test mode shift.
94	12CD	I/O	12C data line.
95	---	O	(Non connected)
96	12CC	I/O	12C clock line.
97	RXDO	I	FLASH writing cereal data input.
98	SID	O	MP3 cereal data output and FLASH writing cereal data output.
99	SIC	O	MP3 cereal clock output and FLASH writing cereal clock output.
100	TSO	I	CD-TEXT data serial input.

■MAS3507D-QG-G10 (IC806) :MP3 decoder

1.Pin layout

```
              PI4 SIC SII SID XVSS XVDD PI8 SOC SOI SOD PI12
              33  32  31  30  29   28   27  26  25  24  23

        PI3  34                                          22  PI13
        PI2  35                                          21  PI14
        PI1  36                                          20  PI15
        PI0  37                                          19  PI16
       CLKO  38                                          18  PI17
        PUP  39                                          17  PI18
       WSEN  40                                          16  PI19
       WRDY  41                                          15  RCS
       AVDD  42                                          14  PR
       CLKI  43                                          13  VSENS
       AVSS  44                                          12  DCSO
              1   2   3   4   5   6   7   8   9   10  11

              TE  POR I2CC I2CD VDD VSS DCEN EOD RTR RTW DCSG
```

(TOP VIEW)

2.Block diagram

MPEG Bit Stream → Sync → Ancillary Data

Digital Audio Output ← Volume Tone Control ← MPEG Decoder → Decoder Status → toμC

Config.Reg.

PIO

Status   Start-up Config.

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3.Pin function

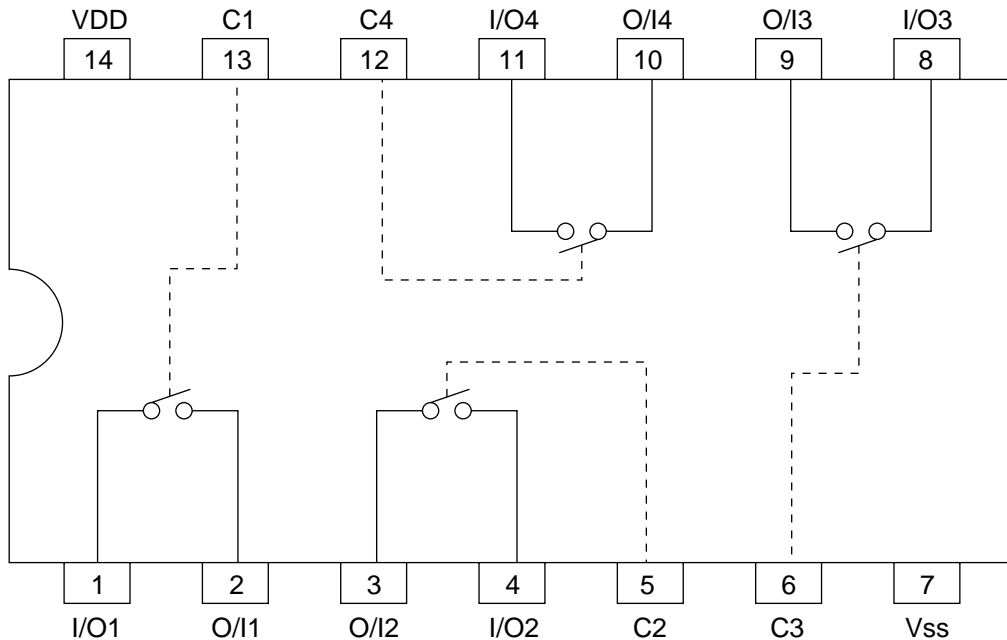| Pin no.	Symbol	I/O	Function
1	TE	I	Test Enable
2	POR	I	Reset, Active Low
3	I2CC	I/O	I²C Clock Line
4	I2CD	I/O	I²C Data Line
5	VDD	Supply	Positive Supply for Digital Parts
6	VSS	Supply	Ground Supply for Digital Parts
7	DCEN	I	Enable DC/DC Converter or Voltage Supervision
8	EOD	OUT	PIO End of DMA, Active Low
9	RTR	OUT	PIO Ready to Read, Active Low
10	RTW	OUT	PIO Ready to Write, Active Low
11	DCSG	Supply	DC Converter Transistor Ground
12	DCSO	O	DC Converter Transistor Open Drain
13	VSENS	I	DC Converter Voltage Sense
14	PR	IN	PIO DMA Request Read/$\overline{\text{Write}}$
15	PCS	IN	PIO Chip Select, Active Low
16	PI19	IN/OUT	PIO Data(19) i)Demand Pin in SDI mode ii)data bit(7),MSB in PIO DMA input mode
17	PI18	IN/OUT	PIO Data(18) i)MPEG header bit11-MPEG ID(SDI mode) ii)data bit(6) in PIO DMA input mode
18	PI17	IN/OUT	PIO Data (17) i)MPEG header bit 12-MPEG ID(SDI mode) ii)data bit(5) in PIO DMA input mode
19	PI16	IN/OUT	PIO Data(16) i)SIC,alternative input for SIC(SDI mode) ii)data bit(4) in PIO DMA input mode
20	PI15	IN/OUT	PIO Data(15) i)SII, alternative input for SII(SDI mode) ii)data bit(3) in PIO DMA input mode
21	PI14	IN/OUT	PIO Data(14) i)SID, alternative input for SID (SDI mode) ii)data bit(2) in PIO DMA input mode
22	PI13	IN/OUT	PIO data(13) i)MPEG header bit 13-Layer ID (SDI mode) ii)data bit(1) in PIO DMA input mode
23	PI12	IN/OUT	PIO Data (12) i)MPEG header bit 14-Layer ID (SDI mode) ii)data bit(0) in PIO DMA input mode
24	SOD	O	Serial Output Data
25	SOI	O	Serial Output Frame Identification
26	SOC	O	Serial Output Clock
27	PI18	IN/OUT	Start-up [1]: Clock output scaler on/off Operation : MPEG CRC error
28	XVDD	Supply	Positive Supply of Output Buffers
29	XVSS	Supply	Ground of Output Buffers
30	SID	I	Serial Input Data
31	SII	I	Serial Input Frame Identification
32	SIC	I	Serial Input Clock
33	PI4	IN/OUT	Start-up [1]: Select SDI/PIODMA input mode Operation : MPEG-Frame Sync
34	PI3	IN/OUT	Start-up [1]: Enable Layer 3 / Disable Layer 3 decoding Operation : MPE Gheader bit 20(Sampling Frequency)
35	PI2	IN/OUT	Start-up [1]: Enable Layer 2 / Disable Layer 2 decoding Operation : MPEG header bit 21(Sampling Frequency)

3.Pin function

Pin no.	Symbol	I/O	Function
36	PI1	IN/OUT	Start-up [1] : SDO Select 32 bit mode / 16 bit I ^{2} S mode Operation : MPEG header bit 30(Emphasis)
37	P0	IN/OUT	Start-up [1] : Select Multimedia mode / Broadcast mode Operation MPEG header bit 31 (Emphasis)
38	CLKO	O	Clock Output (normal 24.576 MHz)
39	PUP	O	Power Up, i.e.Status of Voltage Supervision
40	WSEN	I	WS Enable : Enable DSP
41	ERDY	O	WSEN=0 : Valid clock input at CLKI WSEN=1 : Clock synthesizer PLL locked
42	AVDD	Supply	Supply for Analog Circuits
43	CLKI	I	Clock Input
44	AVSS	Supply	Ground Supply for Analog Circuits

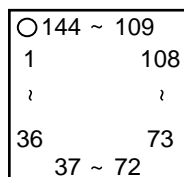[1] Start-up configuration see Table 2.7.3. in (1)

■BU4066BCFV-X (IC322) : Quad analog switch

1. Pin layout & Block diagram

■LC895199K-ND2(IC601):CD-ROM decoder

1.Pin layout

```
○144 ~ 109
1          108
≀            ≀
36          73
  37 ~ 72
```
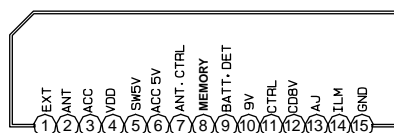
2.Pin function

LC895199K-ND2(1/3)

Pin No.	Symbol	Function
1	VSSO	
2	ZRASO	RAS signal output terminal to buffer DRAM
3	ZCASO	CAS signal output 0 terminal to buffer DRAM(0 is used usually)
4	ZCAS1	CAS signal output terminal 1 to buffer DRAM
5	VSSO	
6	ZOE	Buffer DRAM output enable
7	ZUWE	Buffer DRAM upper write enable
8	ZLWE	Buffer DRAM lower write enable
9	VSSO	
10	RA0	Address signal output terminal to data buffer DRAM
11	RA1	
12	RA2	
13	RA3	
14	RA4	
15	RA5	
16	RA6	
17	RA7	
18	VDD0	5.0V
19	VSS0	
20	RA8	Address signal output terminal to data buffer DRAM
21	IO0	Data I/O terminal to data buffer DRAM. With built-in pull-up resistor
22	IO1	
23	IO2	
24	IO3	
25	IO4	
26	IO5	
27	VSSO	
28	IO6	Data I/O terminal to data buffer DRAM. With built-in pull-up resistor
29	IO7	
30	IO8	
31	IO9	
32	IO10	
33	IO11	
34	IO12	
35	IO13	
36	VSSO	
37	VDD1	3.3V
38	IO14	Data I/O terminal to data buffer DRAM.With buolt-in pull-up resistor
39	IO15	
40	DREQ	
41	DRESP	
42	IOP7	General-purpose I/O port
43	IOP6	
44	IOP5	
45	IOP4	
46	IOP3	
47	IOP2	
48	IOP1	
49	IOP0	
50	HDBDIR	

LC895199K-ND2(2/3)

Pin No.	Symbol	Function
51	TEST0	The terminal TEST.Please connect with VSS
52	XTALCK	X'tal oscillation circuit input terminal
53	XTAL	X'tal oscillation circuit output terminal
54	VDD0	5.0V
55	VSS0	
56	MCK	1/1,2/2,STOP output terminal of XTALCK
57	TEST1	The terminal TEST. Please connet with VSS
58	DSDATA	DAC output terminal
59	DLRCK	
60	DBCK	
61	C2PO	Terminal for CD-DSP I/F
62	SDATA	
63	BCK	
64	LRCK	
65	EXCK	SUB-CODE I/O terminal
66	WFCK	
67	SBSO	
68	SCOR	
69	PLL1	Relation connection of PLL terminal
70	PLL2	
71	PLL3	
72	VSS0	(It is analog VSS in version LC895199 with built-in PLL)
73	VDD1	3.3V (It is analog VDD in version LC895199 with buikt-in PLL)
74	ZRESET	LSI reset terminal
75	MCK3	1/1, 1 /5, 2/5, 1/512, and STOP output terminal of XTALCK
76	CSCTRL	Active Lo and Hi selection terminal on MC(microcontroller) side CS
77	ZRO	Reading data of MC(microcontroller) signal input terminal
78	ZWR	Writing data of MC(microcontroller) signal input terminal
79	ZCS	Register chip selection signal input terminal from MC(microcontroller)
80	SUA0	MC(microcontroller) register selection signal terminal
81	SUA1	
82	SUA2	
83	SUA3	
84	SUA4	
85	SUA5	
86	SUA6	
87	D0	MC(microcontroller) data signal terminal.With buit-in puul-up resistor.
88	D1	
89	D2	
90	VDD0	5.0V
91	VSS0	
92	D3	MC(microcontroller) data signal terminal. With buit-in pull-up resistor.
93	D4	
94	D5	
95	D6	
96	D7	
97	ZINTO	Interrupt request signal output terminal to MC(microcontroller)
98	ZINT1	
99	ZSMAIT	WAIT signal to MC(microcontroller)
100	ZRSTCPU	Reset signal to CPU
101	CSEL	ATAPI control signal
102	ZHRST	ATAPi data bus
103	ATPINSEL	Terminal ATAPI arrangement select terminal. Connects with VDD0
104	ZDASP	ATAPI data bus
105	ZCS3FX	
106	ZCS1FX	
107	DA2	
108	VSS1	
109	VDD1	3.3V

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LC895199K-ND2(3/3)

Pin No.	Symbol	Function
110	DAO	ATAPI data bus
111	ZPDIAG	
112	DA1	
113	ZIOCS16	
114	HITRQ	
115	ZDMACK	
116	VSS1	
117	IORDY	ATAPI data bus
118	ZDIOR	
119	ZDIOR	
120	DMARQ	
121	VSS1	
122	DD15	ATAPi data bus
123	DDO	ATAPi control signal
124	DD14	ATAPI control signal
125	DD1	
126	VDDO	5.0V
127	VSS1	
128	DD13	ATAPI control signal
129	DD2	
130	DD12	
131	DD3	
132	VSS1	
133	DD11	ATAPI control signal
134	DD4	
135	DD10	
136	VSS1	
137	VDD0	5.0V
138	DD5	ATAPI control signal
139	DD9	
140	DD6	
141	VSS1	
142	DD8	
143	DD7	
144	VDD1	3.3V

1-34

■ HA13164 (IC961) : Regulator

1.Pin layout

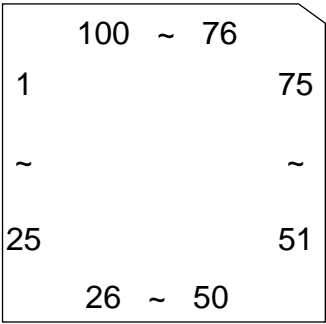

2.Block diagram
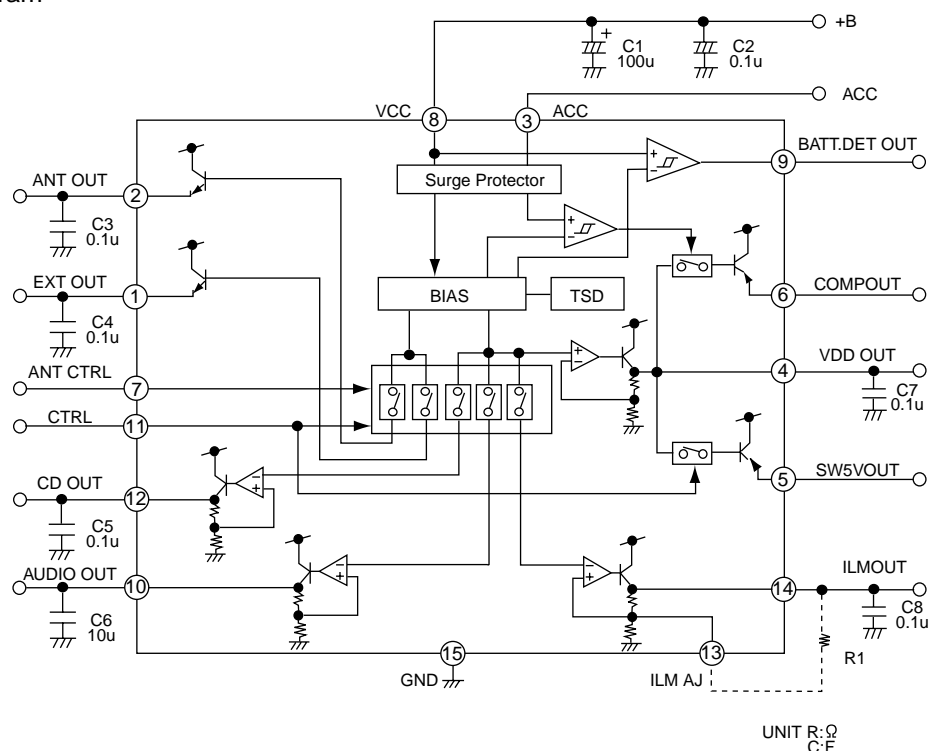
note1)   TAB (header of IC)
connected to GND

3.Pin function

Pin No.	Symbol	Function
1	EXT	Output voltage is VCC-1 V when M or H level applied to CTRL pin.
2	ANT	Output voltage is VCC-1 V when M or H level to CTRL pin and H level to ANT-CTRL.
3	ACC	Connected to ACC.
4	VDD	Regular 5.7V.
5	SW5V	Output voltage is 5V when M or H level applies to CTRL pin.
6	ACC5V	Output for ACC detector.
7	ANT CTRL	L:ANT output OFF , H:ANT output ON
8	MEMORY	Connected to VCC.
9	BATT DET	Low battery detect.
10	9V	Output voltage is 9V when M or H level applied to CTRL pin.
11	CTRL	L:BIAS OFF, M:BIAS ON, H:CD ON
12	CD8V	Output voltage is 8V when H level applied to CTRL pin.
13	AJ	Adjustment pin for ILM output voltage.
14	ILMI	Output voltage is 10V when M or H level applies to CTRL pin.
15	GND	Connected to GND.

■ LC75878W (IC501) : LCD driver

1. Pin layout

2. Block diagram
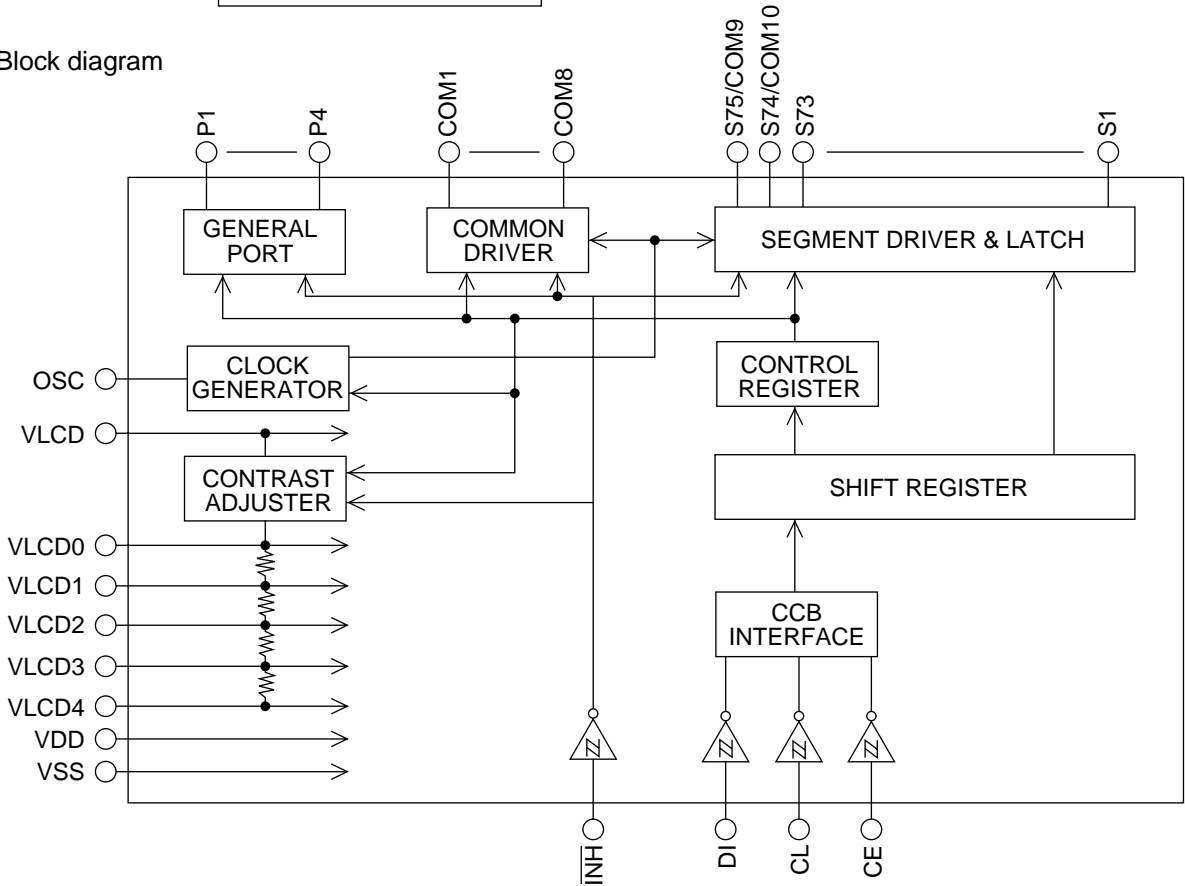
3. Pin function

No.	Symbol	I/O	Function
1~73	SEG1~SEG73	O	Segment driver output pin.
74	SEG74	O	Segment driver output pin.
75	SEG75	O	Segment driver output pin.
76~83	COM8~COM1	O	Common driver output pin.
84~87	P1~P4	O	General-purpose output pin.
88	VDD	-	Logic block power supply pin.
89	VLCD	-	LCD driver power supply pin.
90	VLCD0	O	LCD driver bias 4/4 voltage (H-level) power pin.
91	VLCD1	I	LCD driver bias 3/4 voltage (intermediate level) power pin.
92	VLCD2	I	LCD driver bias 2/4 voltage (intermediate level) power pin.
93	VLCD3	I	LCD driver bias 1/4 voltage (intermediate level) power pin.
94	VLCD4	I	LCD driver bias 0/4 voltage (L-level) power pin.
95	VSS	-	Power supply pin to connect to ground.
96	OSC	I/O	Oscillator pin.
97	LCD RESET	I	Display off, general-purpose output port 「L」 fixed input pin.
98	CE	I	Chip enable
99	CL	I	Synchronization clock
100	DI	I	Transfer data

■ M61508FP-X (IC911) : E. volume

1. Pin layout & Block diagram
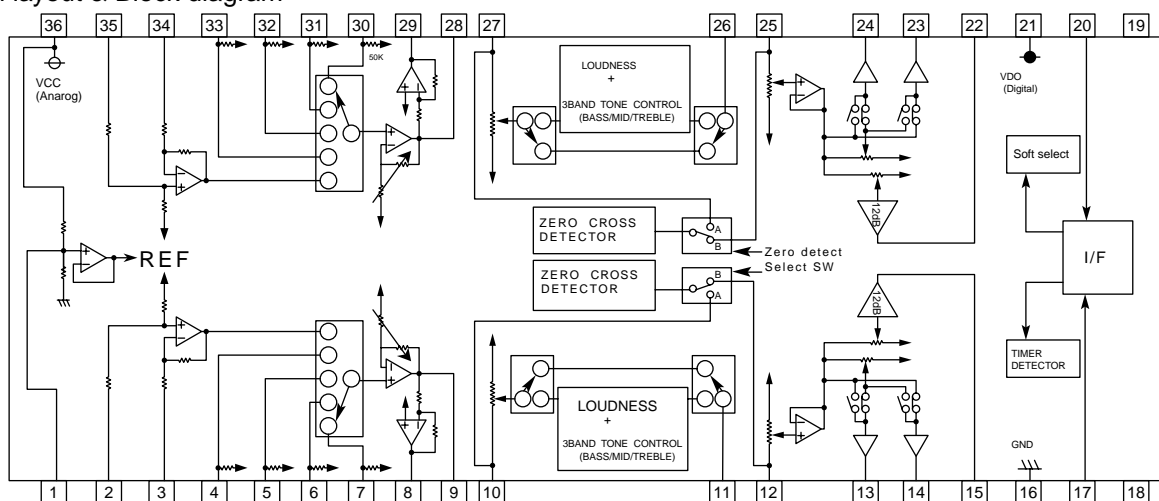
2. Pin function

Pin No.	Symbol	Function
1	REF	Grand for IC signal
2	DEFP IN1	Differential motion amp. Positive terminal
3	DEFN IN1	Differential motion amp. Negative terminal
4	INA1	Input terminal of input selector switch channel 1
5	INB1	Input terminal of input selector switch channel 1
6	INC1	Input terminal of input selector switch channel 1
7	IND1	Input terminal of input selector switch channel 1
8	DEFN OUT1	Differential output terminal (-)
9	SEL OUT1	Input selector output terminal
10	VOL IN1	Volume 1 input terminal
11	TONE OUT1	Tone output terminal
12	FADER IN1	Volume 2 input terminal
13	REAR OUT1	Fader volume control (Rear) output terminal
14	FRONT OUT1	Fader volume control (Front) output terminal
15	NonFader OUT1	Non fader volume output terminal
16	GND	GND terminal
17	DATA	Control data input terminal
18	VDDOUT1	Test terminal
19	VDDOUT2	Test terminal
20	CLOCK	Clock input terminal for serial data transport
21	VDD	Power supply terminal for digital
22	NonFader OUT2	Non fader volume control output terminal
23	FRONT OUT2	Fader volume (Front) output terminal
24	REAR OUT2	Fader volume (Rear) output terminal
25	FADER IN2	Volume 2 input terminal
26	TONE OUT2	Tone output terminal
27	VOL IN2	Volume 1 input terminal
28	SEL OUT2	Input selector output terminal
29	DEFN OUT1	Differential output terminal (-)
30	IND2	Input terminal of input selector switch channel 2
31	INC2	Input terminal of input selector switch channel 2
32	INB2	Input terminal of input selector switch channel 2
33	INA2	Input terminal of input selector switch channel 2
34	DEFN IN1	Differential motion amp negative input terminal
35	DEFP IN1	Differential motion amp positive input terminal
36	VCC	Power supply terminal

■ M63008FP-X (IC604) : 5ch Actuator driver

1.Pin layout

2.Block diagram

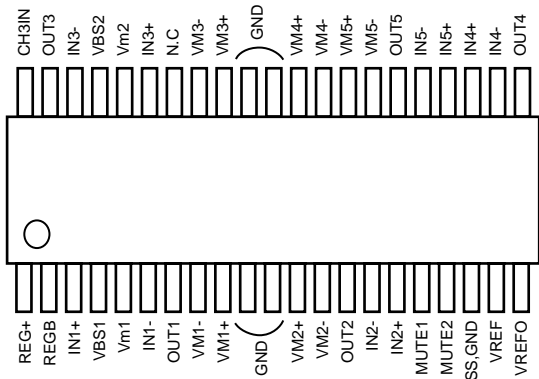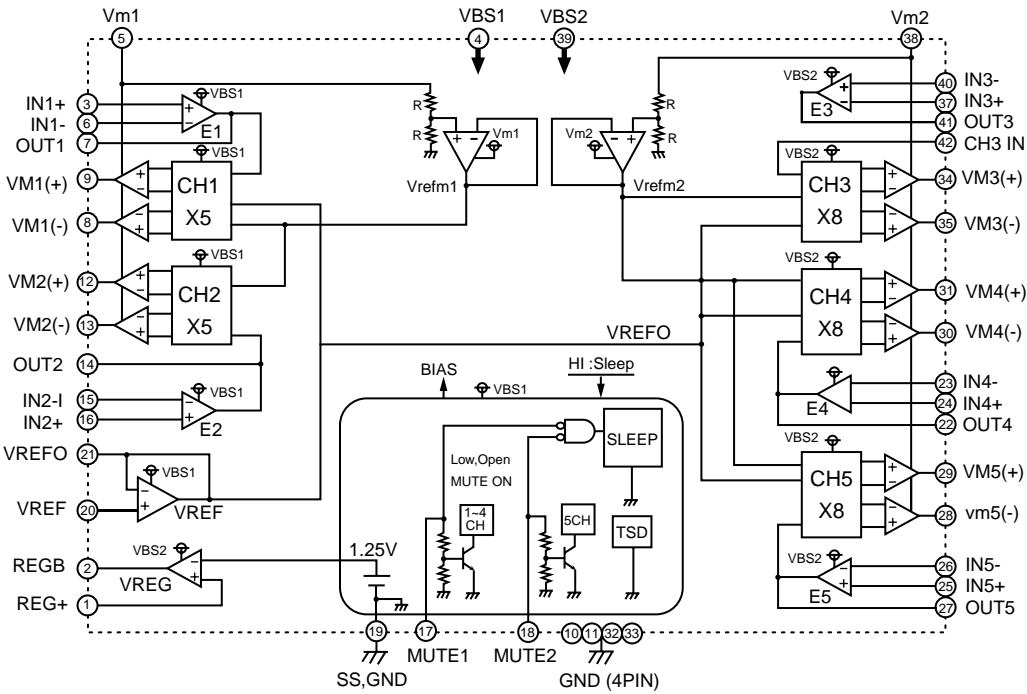## ■ PCM1716E-X (IC802) : D/A converter

1. Pin layout
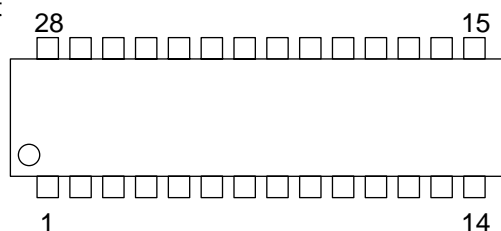
2. Block diagram
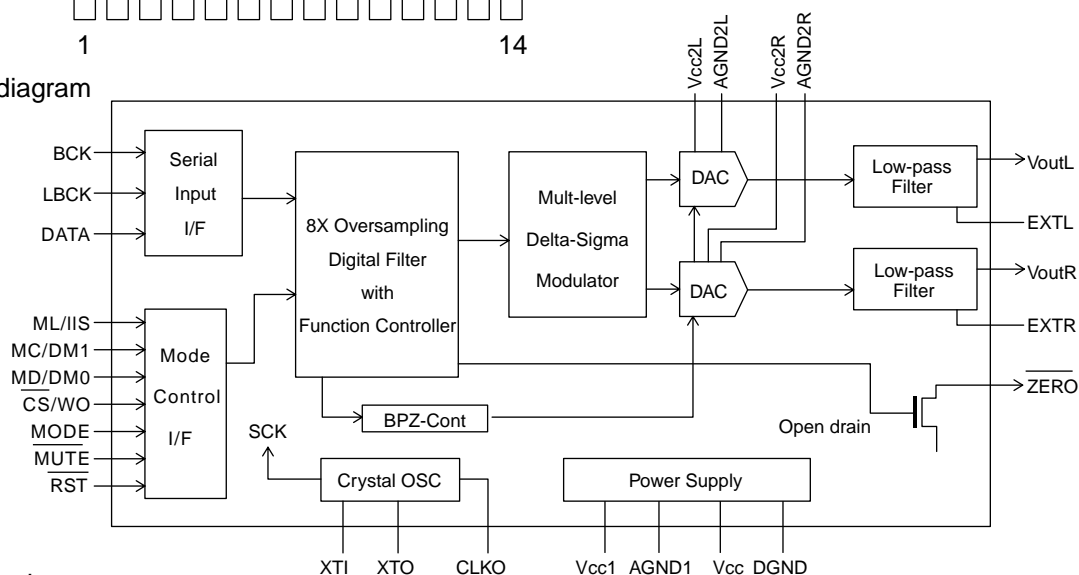
3. Pin function

Pin No.	Symbol	I/O	Function
1	LRCK	I	LRCK clock input
2	DATA	I	Serial audio data input
3	BCK	I	Bit clock input for serial audio data
4	CLKO	O	Buffered output of system clock
5	XTI	I	Oscillator input / External clock input
6	XTO	O	Oscillator output
7	DGND	-	Digital ground
8	VDD	-	Digital power +5V
9	VDD2R	-	Analog power +5V
10	AGND2R	-	Analog ground
11	EXTR	O	Rch common pin of analog output amp
12	NC	-	Non connection
13	VOUTR	O	Rch analog voltage output of audio signal
14	AGND1	-	Analog ground
15	Vcc1	-	Analog power +5V
16	VOUTL	O	Lch analog voltage output of audio signal
17	NC	-	Non connection
18	EXTL	O	Lch common pin of analog output amp
19	AGND2L	-	Analog ground
20	Vcc2L	-	Analog power +5V
21	ZERO	O	Zero data flag
22	RST	I	Reset
23	CS/IWO	I	Chip select / Input format selection
24	MODE	I	Mode control select
25	MUTE	I	Mute control
26	MD/DM0	I	Mode control, Data / De-emphasis selection 1
27	MC/DM1	I	Mode control, BCK / De-emphasis selection 2
28	ML/IIS	I	Mode control, WDCK / Input format selection

■ SAA6579T-X(IC51):RDS

1.Pin layout

```
        QUAL  1 ┌──U──┐ 16  RDCL
        RDDA  2 │     │ 15  T57
        Vref  3 │     │ 14  OSCO
        MUX   4 │     │ 13  OSCI
        VODA  5 │     │ 12  VODD
        VSSA  6 │     │ 11  VSSD
        CIN   7 │     │ 10  TEST
       SCOUT  8 └─────┘ 9   MODE
```
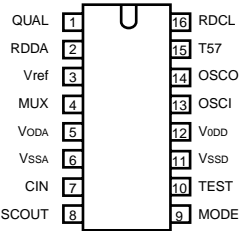
2.Block diagram
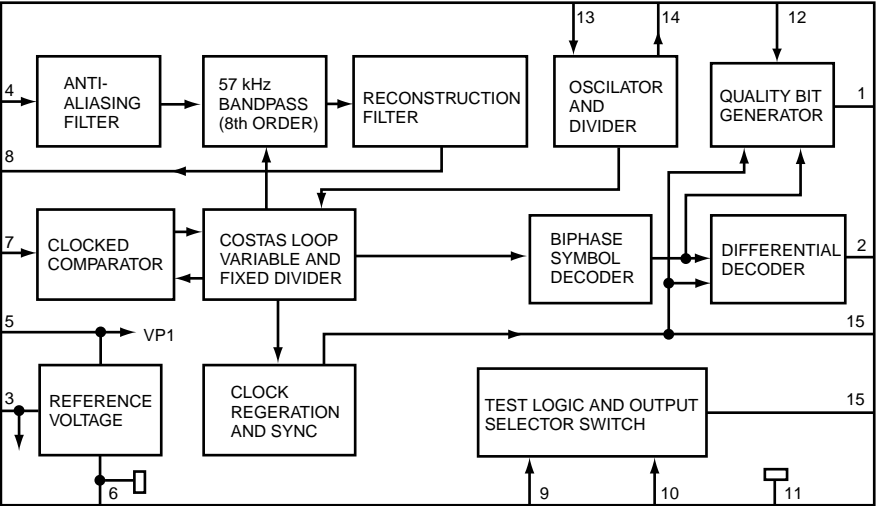
3.Pin function

Pin No.	Symbol	Description
1	QUAL	Quality indication output
2	RDDA	RDS data output
3	Vref	Reference voltage output (0.5VDDA)
4	MUX	Multiolex signal input
5	VDDA	+5V supply voltage for analog part
6	VSSA	Ground for analog part (0V)
7	CIN	Subcarrier input to comparator
8	SCOUT	Subcarrier output of reconstruction filter
9	MODE	Oscllator mode / test control input
10	TEST	Test enable input
11	VSSD	Ground for digital part (0V)
12	VDDD	+5V supply voltage for digital part
13	OSCI	Oscillator input
14	OSCO	Oscillator output
15	T57	57 kHz clock signal output
16	RDCL	RDS clock output

■ BA3220FV-X (IC301,IC401) : Line out amp

1.Pin layout
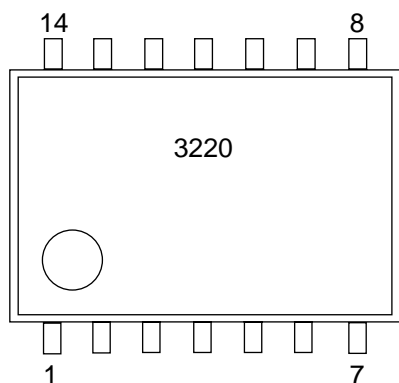
2.Block diagram
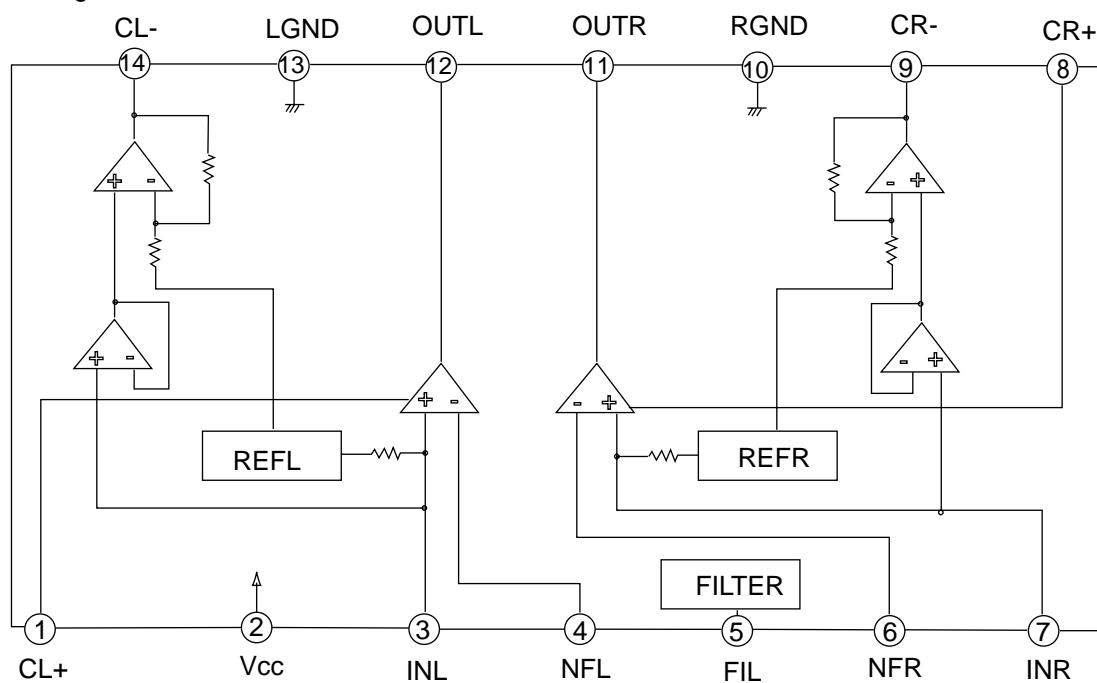
■IS41C16256-35T(IC602):RAM

1.Pin layout

```
        44              ~              21


        1               ~              22
```

2.Block diagram

$\overline{OE}$
$\overline{WE}$

$\overline{LCAS}$ → | $\overline{CAS}$ CLOCK GENERATOR | → CAS → | $\overline{WE}$ CONTROL LOGICS | → WE → | $\overline{OE}$ CONTROL LOGIC |
$\overline{UCAS}$ →

$\overline{RAS}$ → | $\overline{RAS}$ CLOCK GENERATOR | RAS

REFRESH COUNTER

DATA I/O BUS

COLUMN DECODERS

SENSE AMPLIFIERS

ADRESS BUFFERS

A0-A8

ROW DECODER

MEMORY ARRAY
262.144 x 16

DATA I/O BUFFERS

OE

I/O0-I/O15
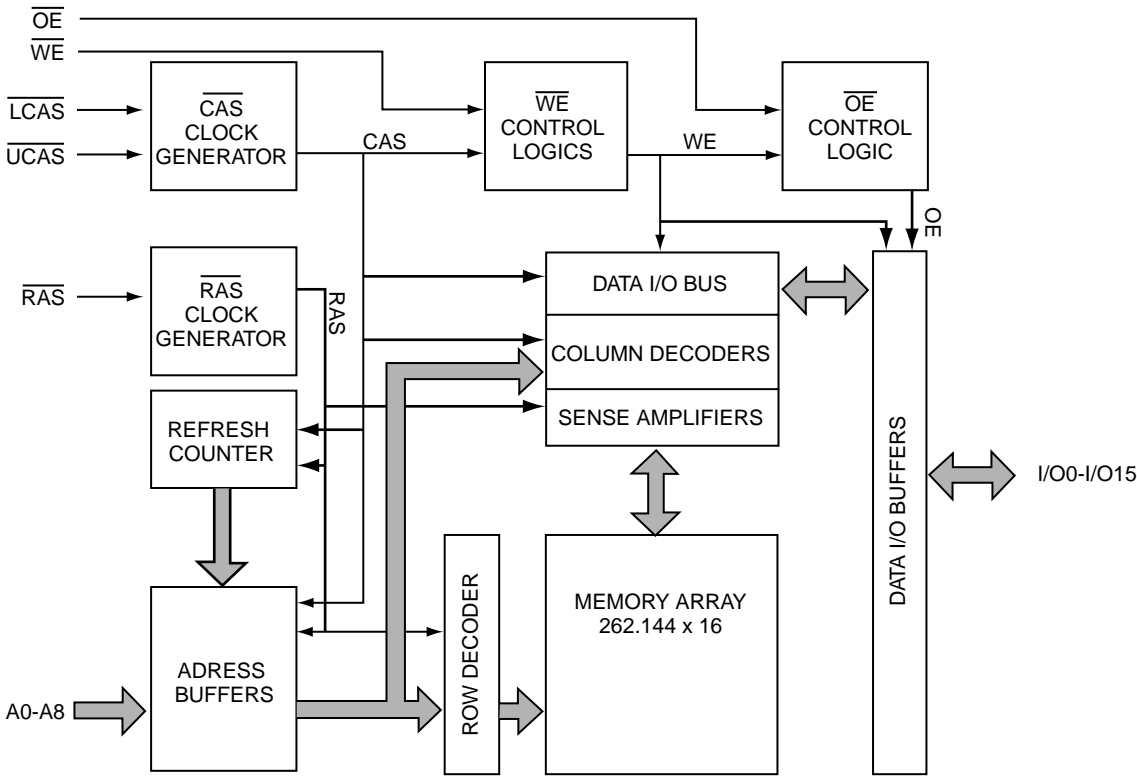
■ IC-PST9333U-X (IC702) : Reset IC

1. Pin layout

NC	1	○ NC	4	Vcc
GND	2	GND	3	VOUT
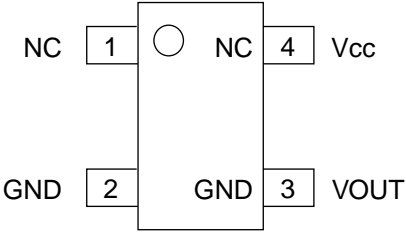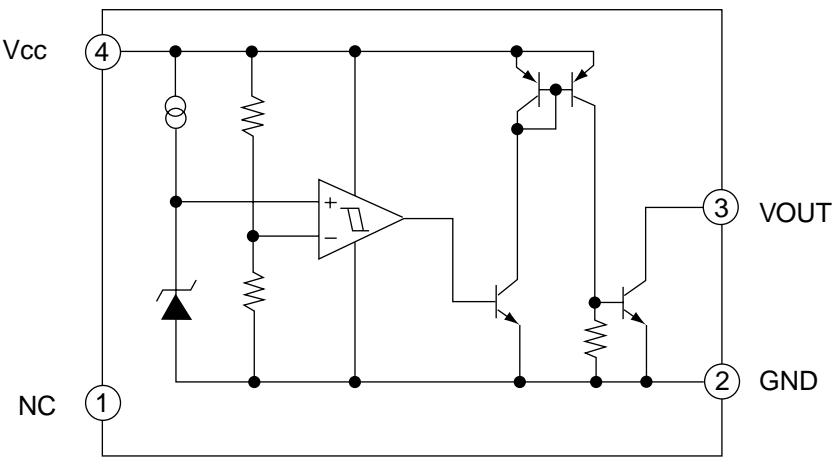
2. Block diagram

3. Pin function

Pin No.	Symbol	Function
1	NC	Non connect
2	GND	GND terminal
3	VOUT	Reset signal output terminal
4	Vcc	Power supply terminal

■ NJM4565V-X (IC171,IC951,IC323) : Ope amp

1. Pin layout & Block diagram
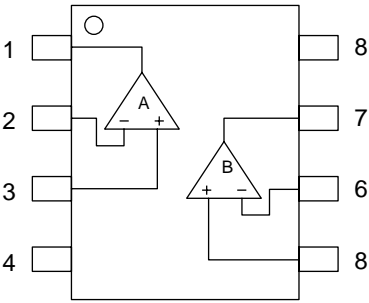
2. Pin function

Pin No.	Function
1	A output
2	A-input
3	A+input
4	V-
5	B+input
6	B-input
7	B output
8	V+

■ NJM4580V-X (IC801) : CD LPF

1. Pin layout & Block diagram
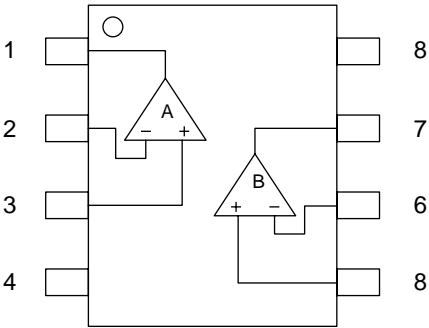
2. Pin function

Pin No.	Function
1	A output
2	A -input
3	A +input
4	V-
5	B +input
6	B -input
7	B output
8	V+

■ RPM6938-SV4 (IC561) : Remote sensor

1.Block diagram
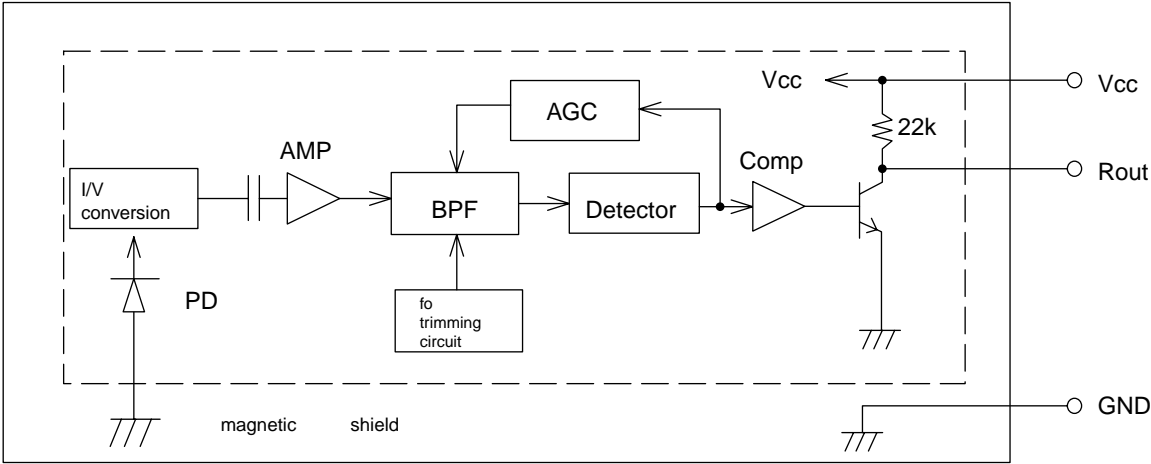
■ S-81332HG-KC-X (IC804) : Regulator

1. Pin layout

1	Vout
2	GND
3	Vin

1   2   3
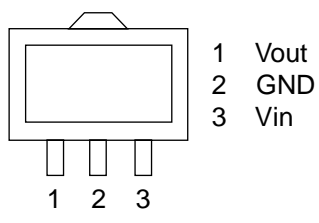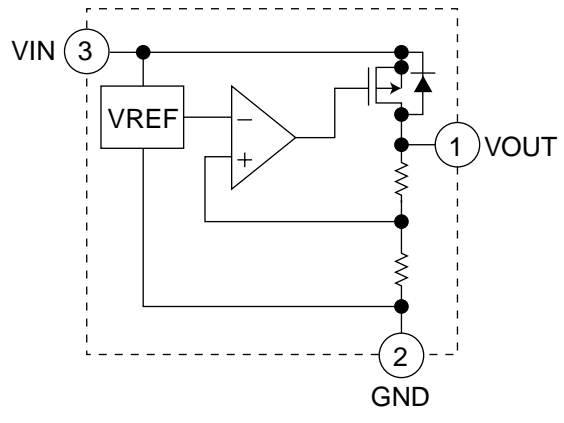
2. Block diagram

■ LB1830M-X(IC608):Regulator

1.Pin layout

IN2 IN1 Vm Vm1 Vcont
10   9   8   7   6

Vcc OUT2 GND OUT1 Vs
1   2   3   4   5
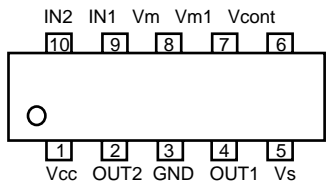
2.Block diagram
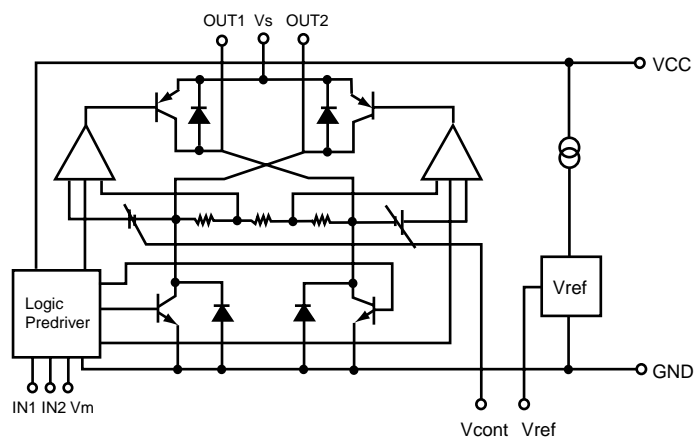
■TC74VHC126FT-X(IC605):Buffer

1.Pin layout

1G	1		14	Vcc
1A	2		13	4G
1Y	3		12	4A
2G	4		11	4Y
2A	5		10	3G
2Y	6		9	3A
GND	7		8	3Y
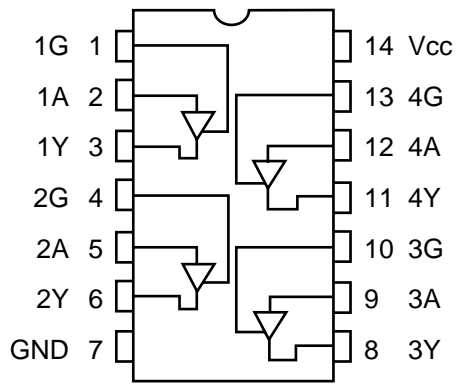
2.Function

INPUTS		OUTPUT
G	A	Y
L	X	Z
H	L	L
H	H	H

X:Don't Care
Z: High impedance

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PARTS LIST

[KD-SH99R]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix

E ----------- Continental Europe
EX -------------- Central Europe

- Contents -

■ Parts list (General assembly)

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	---------------	CD MECHA	1		
	2	LV42606-001A	COOLING RUBBER	1		
	4	LV10461-001A	TOP CHASSIS	1		
	5	LV32559-003A	FRONT CHASSIS ASSY	1		
	6	LV40828-003A	BLIND	1		
	7	LV42419-001A	LENS SHEET	1		
	8	LV40846-017A	SPACER(F)	1		
	9	WJT0057-001A	E CARD WIRE	1		
	10	LV32451-001A	SIDE HEAT SINK	1		
	11	LV32452-002A	INSULATOR	1		
	12	QYSDST2604Z	SCREW	3	T.CHAS+CD MECHA	
	13	QYSDSF2610Z	TAPPING SCREW	1	T.CHAS+S HEAT SINK	
	14	LV41200-003A	SPESIAL SCREW	3	T.CHAS+S HEAT SINK	
	15	LV41200-003A	SPESIAL SCREW	1	T.CHASS+REAR	
	16	QYSDST2604Z	SCREW	5	T.CHAS+B.CHASSIS	
	17	QYSDST2604Z	SCREW	2	T.CHAS+R.BKT	
	18	LV41200-001A	SPECIAL SCREW	1	BOTTOM CHA.+REAR BKT	
	19	QYSPSP2003M	SCREW	2	T.CHAS+F.COVER	
	20	LV41200-001A	SPECIAL SCREW	2	MAIN PWB+BOTTOM CHA.	
	21	LV10463-001A	BOTTOM CHASSIS	1		
	22	LV32453-001A	FPC GUIDE	1		
	23	LV20929-001A	GUIDE RAIL(L)	1		
	24	LV20930-001A	GUIDE RAIL(R)	1		
	25	LV42239-001A	S PLATE(L) ASSY	1		
	26	LV42240-001A	S PLATE(R) ASSY	1		
	27	LV42104-001A	DETECT PLATE	1		
	28	QYSPSPU1725M	SCREW	2	DET.PL+S.PL(L)	
	29	LV32569-003A	A BKT ASS'Y(L)	1		
	30	LV32570-001A	A BKT ASS'Y(R)	1		
	31	LV42112-001A	TENS SPG(L)	2		
	32	LV32459-001A	ROD GEAR(SH)	1		
	33	QYWFL259013-0	WASHER	2	FOR ROD GEAR	
	34	LV32530-001A	GUIDE BLOCK(R)	1		
	35	LV32531-001A	GUIDE BLOCK(L)	1		
	36	LV32460-001A	MOTOR BKT ASS'Y	1		
	37	QAR0182-001	MOTOR(FEED)	1		
	38	QYSPSPT2020Z	MINI SCREW	2	MOTOR+MOTOR BKT	
	39	LV40847-002A	SPACER	1		
	40	WJM0204-001A	E-SI C WIRE C-F	1		
	41	LV42455-001A	SHAFT	1		
	42	LV42437-001A	ROTOR	1		
	43	LV42436-001A	WORM GEAR	1		
	44	LV42115-002A	GEAR S1	1		
	45	LV42116-002A	GEAR S2	1		
	46	LV42117-001A	GEAR S3	1		
	47	LV42118-002A	GEAR S4	1		
	48	LV42119-001A	GEAR S5	1		
	49	WDM215025	WASHER	5	FOR GEAR S1-S5	

■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	50	WDM214540	WASHER	1	FOR CLUTCH ASSY	
	51	LV30981-005A	CLUTCH ASS'Y	1		
	52	QYWFL266010-9	WASHER	1	FOR CLUTCH	
	53	LV32558-001A	FRONT BKT ASSY	1		
	54	LV42394-001A	ABSORBER	1		
	55	LV40846-015A	SPACER(F)	1		
	56	LV40846-018A	SPACER(F)	1		
	57	LV40846-022A	SPACER(F)	1	F.BKT ASSY	
	58	LV20933-002A	CONECTOR COVER	1		
	59	LV40846-018A	SPACER(F)	1		
	60	LV42534-001A	CONNECT PTN	2		
	61	QYSPSPU1730M	SCREW	1		
	62	LV32461-001A	REINFORCE PLATE	1		
	63	QYSPSP2003M	SCREW	2		
	64	LV32462-001A	OPEN LEVER	1		
	65	LV42122-001A	TORSION SPRING	1	FOR OPEN LEVER	
	66	LV32463-001A	DETACH LEVER	1		
	67	LV42123-001A	DTCH LVR SHAFT	1		
	68	LV42124-001A	TORSION SPRING	1	FOR DTCH LEVER	
	69	QAL0314-002	FPC	1		
	70	LV42420-001A	FPC SHEET	1		
	71	LV40865-001A	MINI SCREW	1	FPC GUIDE+BOT.CH	
	72	LV40865-001A	MINI SCREW	3	G.RAIL(L)+BOT.CH	
	73	LV40865-001A	MINI SCREW	3	G.RAIL(R)+BOT.CH	
	74	LV40865-001A	MINI SCREW	2	DET.SW PWB+BO.CH	
	75	LV40865-001A	MINI SCREW	2	ARM BKT(L)+BO.CH	
	76	LV40865-001A	MINI SCREW	2	ARM BKT(R)+BO.CH	
	77	LV40865-001A	MINI SCREW	2	MOTOR BKT+BOT.CH	
	78	LV42181-002A	SPECIAL SCREW	4	ARM+PANEL BKT	
	79	LV10464-002A	FRONT PANEL	1		
	80	LV40848-023A	SPACER(P)	2		
	81	LV32464-008A	AL PANEL	1		
	82	LV10465-001A	REAR COVER	1		
	83	LV42127-005A	EARTH SPRING R	1		
	84	QYSPSPU1730M	SCREW	1	FOR E.SPRING	
	85	LV20934-001A	PRESET BUTTON	1		
	86	LV42456-001A	SW PWB SHEET	1		
	87	LV42457-001A	BUTTON SHEET	6		
	88	LV40848-024A	SPACER(P)	2		
	89	LV32557-001A	PUSH BUTTON(L)	1		
	90	LV32466-001A	PUSH BUTTON(R)	1		
	91	LV20936-002A	D.FUNC BUTTON	1		
	92	LV32467-002A	DETACH BUTTON	1		
	93	LV42128-001A	COMP. SPRING	1		
	94	LV42129-001A	REMOTE LENS	1		
	95	LV20937-006A	FINDER	1		
	96	LV32797-001A	VOL.KNOB ASS'Y	1		
	97	LV42386-001A	COMP.SPRING	1		

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	98	LV32469-001A	RING LENS	1		
	99	LV32556-002A	VOL.RING	1		
	100	VKZ4777-001	MINI SCREW	4	F.PANEL+REAR CV	
	101	VKZ4777-001	MINI SCREW	4	F.PANEL+SW.PWB	
	102	VYSH101-009	SPACER	2		
	103	LV40846-016A	SPACER(F)	2		
	104	LV32615-001A	NAME PLATE	1		
	105	LV41143-001A	SHEET	1		
	106	VMA4652-001SS	EARTH PLATE	1		
	107	LV42297-001A	IC BRACKET	1		
	108	LV41993-001A	REG BRACKET	1		
⚠	109	QMFZ039-150-T	FUSE	1		
	110	QAM0237-001	CAR CABLE	1		
	111	QAM0178-001	PIN CORD ASS'Y	1		
	112	QAM0179-001	CAR CABLE	1	GOLD	
	113	LV30943-202A	REAR BRACKET	1		
	114	LV30946-006A	REAR HEAT SINK	1		
	115	LV40790-002A	PIN CORD BRKT	1		
	116	QYSDST2604Z	SCREW	1	ANT.+REAR.BKT	
	117	LV41200-003A	SPESIAL SCREW	1	REG.BKT+REAR BKT	
	118	QYSDST2606Z	SCREW	1	CHANGER CO.+REAR BKT	
	119	QYSDST2606Z	SCREW	1	REAR HEAT SINK+R BKT	
	120	QYSDST2604Z	SCREW	2	CORD BKT+PIN CORD	
	121	QYSDST2604Z	SCREW	1	CORD BKT+REAR BKT	
	122	QYSDST2604Z	SCREW	1	VCR+REAR.BKT	
	123	QNZ0510-001	RUBBER CONNEC	2		
	124	LV42101-001A	LCD FILTER	1		
	125	LV32447-001A	LCD CASE	1		
	126	LV32446-001A	LIGHTING CASE	1		
	127	LV32448-001A	LIGHTING LENS	1		
	128	LV32449-001A	LED HOLDER	1		
	129	VYTA500-001	PIN CAP	8		
	130	LV30225-0A1A	SPACER	1		
	LCD 1	QLD0168-001	LCD MODULE	1		

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Exploded view of general assembly and parts list

Block No. M 1 M M

CD mechanism assembly and parts list

Grease
★ G-31SA
※ G-31SA(Bottom side)
● RX-405

TN-CCD1001Z-138
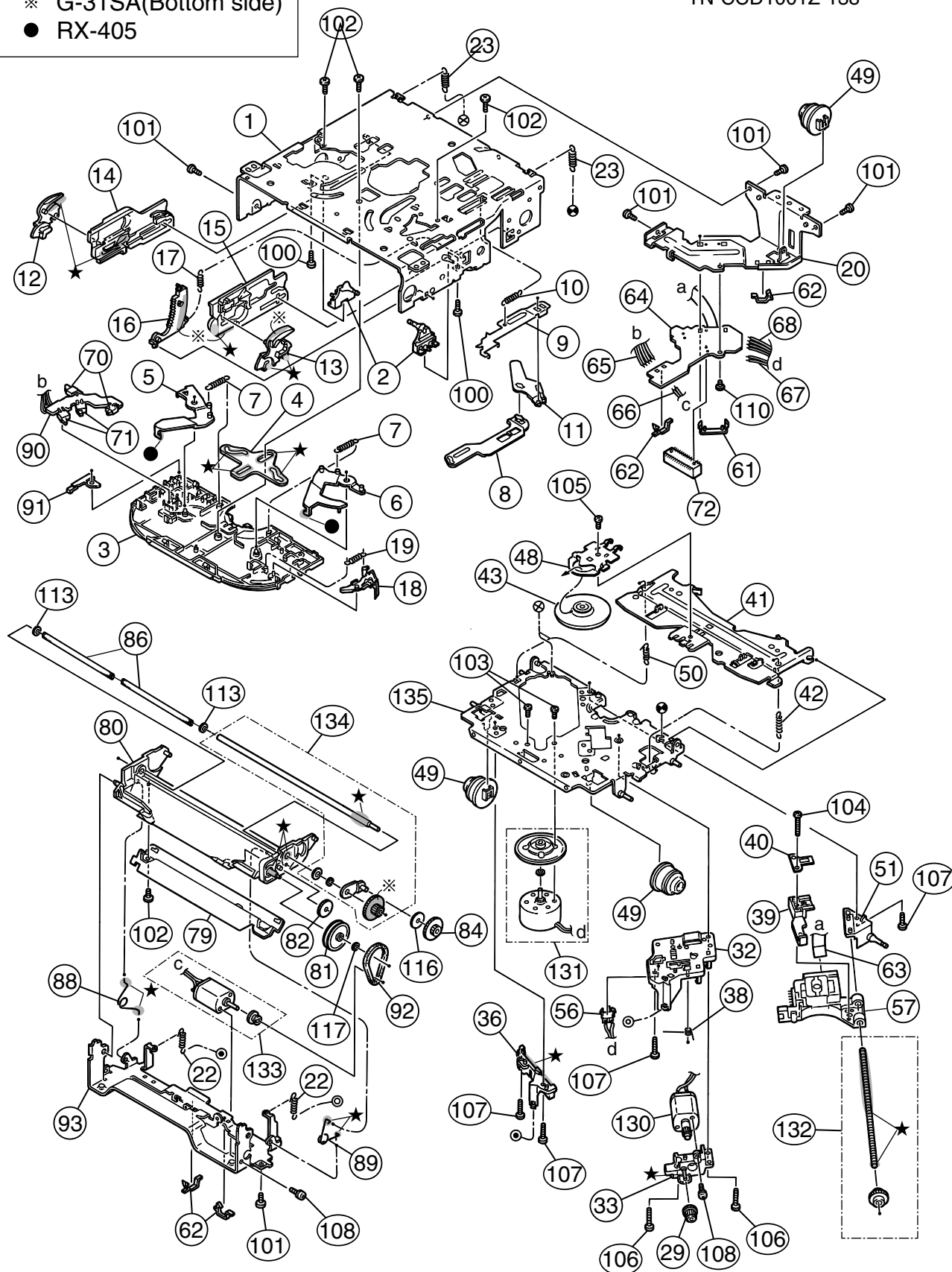
■ Parts list (CD mechanism)

Block No. M2MM
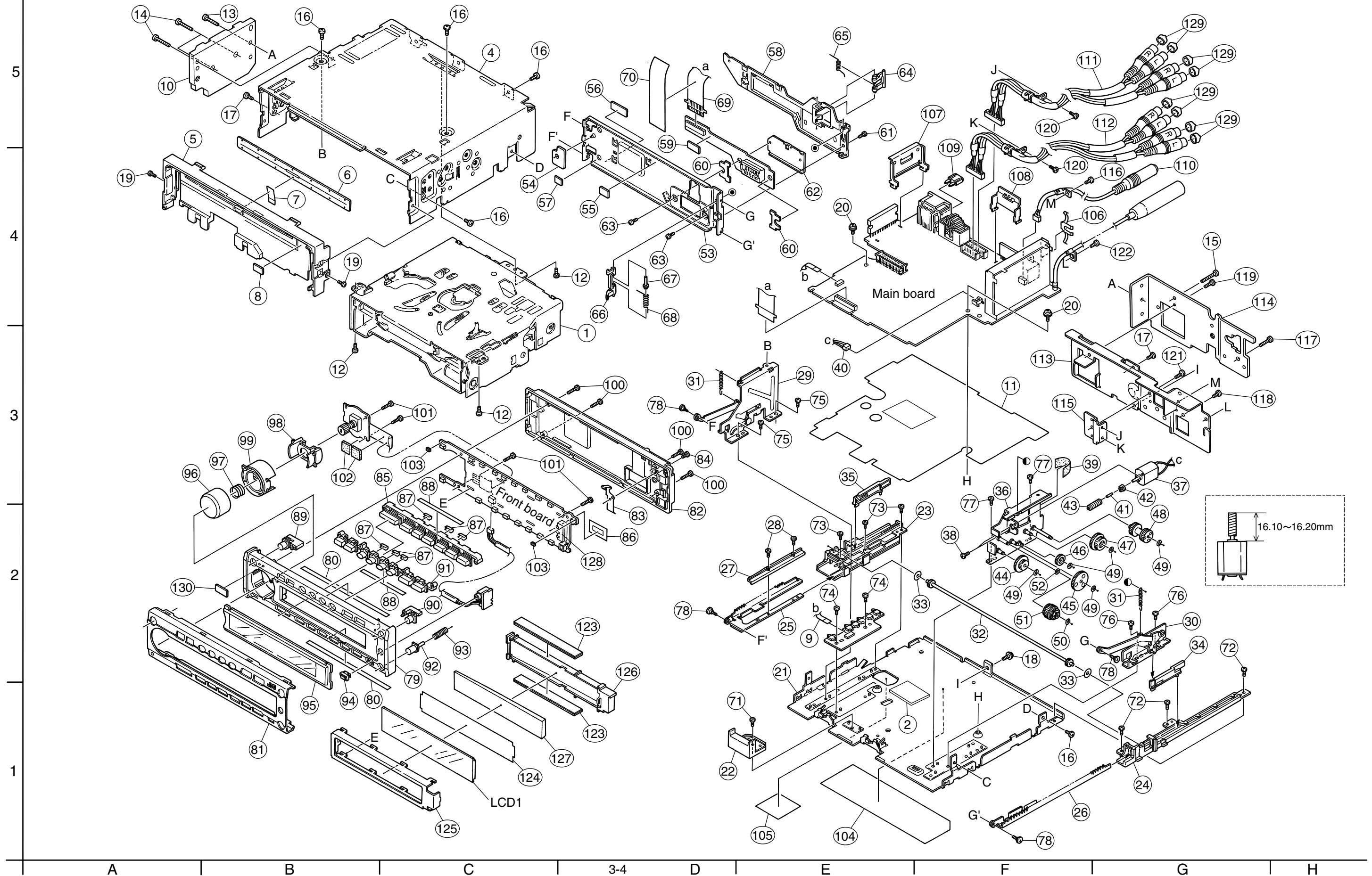
⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	30310101T	FRAME	1		
	2	30310103T	DANPER PIN	2		
	3	30310107T	UPPER PLATE	1		
	4	30310108T	SEL STOP PLATE	1		
	5	30310142T	SEL ARM (L)L	1		
	6	30310143T	SEL ARM (R)L	1		
	7	30310145T	S ARM SPRING(L)	2		
	8	30310112T	TRIG LEVER	1		
	9	30310155T	TRIG PL(Z)	1		
	10	30310115T	TRIG PL SPRING	1		
	11	30310116T	TRIG ARM	1		
	12	30310134T	FIX ARM (L)B	1		
	13	30310159T	FIX ARM (R)Z	1		
	14	30310150T	FIX PL (L)Z	1		
	15	30310156T	FIX PL (R) Z	1		
	16	30310138T	LDG GR (6)B	1		
	17	30310122T	LDG GEAR (6)SP	1		
	18	30310148T	S.L ARM(N)	1		
	19	30310125T	S.L ARM SPRING	1		
	20	30310149T	REAR DAM BKT(Z)	1		
	22	30310151T	HUNG UP SP (FZ)	2		
	23	30310129T	HUNG UP SP (R)	2		
	29	30300510T	PU GEAR(B)	1		
	32	30310544T	F.M.BASE(Z)	1		
	33	30310547T	FD GR BLK(Z)	1		
	36	30310546T	PU GUIDE(Z)	1		
	38	30310533T	THRUST SPR(M)	1		
	39	30310577T	PU M NUT(Z-S)	1		
	40	30310512T	NUT PUSH SPR PL	1		
	41	30310558T	CLP ARM(Z)	1		
	42	30310514T	CLP ARM SPRING	1		
	43	30310552T	CLAMPER(Z)	1		
	48	30310557T	CLAMPER PLATE(Z	1		
	49	30310524T	DAMPER (J)	3		
	50	30310525T	CLP ARM SPR (L)	1		
	51	30310545T	F SCREW GUIDE(Z	1		
	56	64180405T	DET SW	1	ESE11SF4	
	57	QAL0230-001	C.D PICK (SONY)	1		
	61	30311035T	FPC HOLDER(Z)	1		
	62	19501403T	WIRE CLAMPER	4		
	63	30311045T	PICK UP FPC(Z-S	1		
	64	30311044T	CONNECT.PCB(Z-S	1		
	65	30311038T	WIRE (5P-Z)	1		
	66	30311039T	WIRE (LD-Z)	1		
	67	30311040T	WIRE (FD-Z)	1		
	68	30311041T	WIRE (RS-Z)	1		
	70	64180402T	DET SWITCH	2	ESE22MH1	
	71	64180403T	DET SWITCH	2	ESE22MH3	

■ Parts list (CD mechanism)

Block No. M2MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	72	68150232T	CONNECTOR	1	TKC-W26X-C1	
	79	30311105T	SOPPORT PLATE	1		
	80	30311138T	GR MT BLK(N)	1		
	81	30311109T	LDG GEAR (2)	1		
	82	30311110T	LDG GEAR (3)	1		
	84	30311112T	LDG GEAR (5)	1		
	86	30311136T	LDG ROLLER	2		
	88	30311118T	L.P SPRING (L)	1		
	89	30311119T	L.P SPRING (R)	1		
	90	30311123T	SW PCB	1		
	91	30311124T	SW ACTUATOR	1		
	92	30311129T	LDG BELT	1		
	93	30311140T	FRONT BRKT (J)	1		
	100	9C0620503T	C B TAP SCREW	2	M2X5	
	101	9C2020401T	C SCREW TS.G	5	M2X4	
	102	9C4320403T	C B TAP SCREW	4	M2X4	
	103	9C0117223T	SCREW	2	M1.7X2.2	
	104	9C0917703T	C TAP SCREW S3	1	M1.7X7	
	105	9C0320201T	C TAP SCREW S3	1	M2X2	
	106	9C4920013T	C TAP SCREW S3	2	M2X10	
	107	9C4920603T	C TAP SCREW B3	4	M2X6	
	108	9P0220031T	TAMS SCREW	2	M2X3	
	110	9C0420253	C TAP SCREW	1	M2X2.5	
	113	9W0330276	NW BLUE	2	2.9X5X0.3	
	116	9W0725030T	LUMILAR W	1	2.3X9.8X0.25	
	117	9W0640030T	WASHER	1	1.4X3.2X0.4	
	130	303105310T	FEED MO ASSY	1		
	131	303105311T	SPINDLE MO ASSY	1		
	132	303105312T	FEED SCREW ASSY	1		
	133	303111301T	LDG MOTOR ASSY	1		
	134	303111302T	RDG RLR SFT ASY	1		
	135	303105502T	T.T.BASE ASSY	1		

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■ **Electrical parts list (Main board)**   **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	BZ791	QAN0009-001Z	BUZZER				C 306	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 1	NCB31EK-473X	C CAPACITOR				C 307	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 2	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V			C 308	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 3	NCB31HK-103X	C CAPACITOR				C 309	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 4	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V			C 310	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 5	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V			C 321	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 7	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V			C 323	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V	
	C 8	NCB31HK-103X	C CAPACITOR				C 325	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 9	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V			C 327	NCB31CK-823X	C CAPACITOR		
	C 10	NCB31EK-473X	C CAPACITOR				C 328	NCB31HK-682X	C CAPACITOR		
	C 21	NCS31HJ-331X	C CAPACITOR				C 329	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 22	NCB31HK-103X	C CAPACITOR				C 330	NCB31HK-123X	C CAPACITOR		
	C 23	NCB31HK-472X	C CAPACITOR				C 331	NCB31HK-562X	C CAPACITOR		
	C 24	NCB31CK-104X	C CAPACITOR				C 332	NCB31EK-273X	C CAPACITOR		
	C 25	QERF1HM-474Z	E CAPACITOR	0.47MF 20% 50V			C 333	NCB31EK-273X	C CAPACITOR		
	C 32	QERF1HM-104Z	E CAPACITOR	0.1MF 20% 50V			C 334	NCB31EK-333X	C CAPACITOR		
	C 34	NCB31CK-104X	C CAPACITOR				C 336	NCB31EK-473X	C CAPACITOR		
	C 47	NCS31HJ-101X	C CAPACITOR				C 337	NCB31EK-473X	C CAPACITOR		
	C 51	NDC31HJ-820X	C CAPACITOR				C 350	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 52	NDC31HJ-470X	C CAPACITOR				C 351	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 53	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 401	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 54	NCB31HK-103X	C CAPACITOR				C 402	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 55	NCS31HJ-561X	C CAPACITOR				C 403	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V	
	C 56	NCB31EK-223X	C CAPACITOR				C 404	NCB31HK-103X	C CAPACITOR		
	C 57	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V			C 405	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 81	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 406	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 82	NCS31HJ-821X	C CAPACITOR				C 407	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 84	NCB31HK-153X	C CAPACITOR				C 408	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 91	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 409	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V	
	C 92	NCS31HJ-821X	C CAPACITOR				C 410	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 94	NCB31HK-153X	C CAPACITOR				C 450	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 103	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 451	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 110	NBE21CM-105X	C CAPACITOR				C 601	NCS31HJ-7R0X	C CAPACITOR		
	C 112	NBE21CM-105X	C CAPACITOR				C 602	NCS31HJ-7R0X	C CAPACITOR		
	C 118	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V			C 603	NCF31CZ-104X	C CAPACITOR		
	C 120	NCB31CK-104X	C CAPACITOR				C 604	NCB31CK-104X	C CAPACITOR		
	C 141	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V			C 605	NCF31CZ-104X	C CAPACITOR		
	C 142	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V			C 606	NCB31HK-103X	C CAPACITOR		
	C 143	NCS31HJ-101X	C CAPACITOR				C 609	NBE21AM-106X	E CAPACITOR		
	C 144	NCS31HJ-101X	C CAPACITOR				C 610	NCF31CZ-104X	C CAPACITOR		
	C 161	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V			C 611	NCF31CZ-104X	C CAPACITOR		
	C 162	QERF1CM-226Z	E CAPACITOR	22MF 20% 16V			C 612	NCF31CZ-104X	C CAPACITOR		
	C 163	NCB21EK-473X	C CAPACITOR				C 613	NCF31CZ-104X	C CAPACITOR		
	C 164	QERF1HM-224Z	E CAPACITOR	0.22MF 20% 50V			C 614	NCF31CZ-104X	C CAPACITOR		
	C 172	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V			C 615	NCF31CZ-104X	C CAPACITOR		
	C 173	QERF0JM-226Z	E CAPACITOR	22MF 20% 6.3V			C 616	NCF31CZ-104X	C CAPACITOR		
	C 174	NCB21EK-223X	C CAPACITOR				C 617	NCF31CZ-104X	C CAPACITOR		
	C 175	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 618	NCF31CZ-104X	C CAPACITOR		
	C 203	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 619	NCF31CZ-104X	C CAPACITOR		
	C 210	NBE21CM-105X	C CAPACITOR				C 620	NCB31HK-103X	C CAPACITOR		
	C 212	NBE21CM-105X	C CAPACITOR				C 621	NCB31CK-104X	C CAPACITOR		
	C 220	NCB31CK-104X	C CAPACITOR				C 622	NCF31CZ-104X	C CAPACITOR		
	C 241	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V			C 623	NCB31CK-104X	C CAPACITOR		
	C 242	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V			C 624	NCB31HK-102X	C CAPACITOR		
	C 243	NCS31HJ-101X	C CAPACITOR				C 625	NBE41AM-226X	E CAPACITOR		
	C 244	NCS31HJ-101X	C CAPACITOR				C 626	NCB31HK-103X	C CAPACITOR		
	C 272	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V			C 627	NCB31CK-104X	C CAPACITOR		
	C 273	QERF0JM-226Z	E CAPACITOR	22MF 20% 6.3V			C 628	NCS31HJ-4R0X	C CAPACITOR		
	C 301	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 629	NCS31HJ-120X	C CAPACITOR		
	C 302	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 630	NCS31HJ-220X	C CAPACITOR		
	C 303	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V			C 631	NCS31HJ-560X	C CAPACITOR		
	C 304	NCB31HK-103X	C CAPACITOR				C 632	NCS31HJ-270X	C CAPACITOR		
	C 305	QERF1EM-475Z	E CAPACITOR	4.7MF 20% 25V			C 633	NCB31CK-104X	C CAPACITOR		

■ Electrical parts list (Main board) Block No. 01

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	C 634	NBE41AM-226X	E CAPACITOR				C 817	NCS31HJ-101X	C CAPACITOR		
	C 635	NCB31HK-103X	C CAPACITOR				C 818	NCS31HJ-101X	C CAPACITOR		
	C 636	NEA70JM-107X	E CAPACITOR				C 819	NCS31HJ-101X	C CAPACITOR		
	C 637	NCB31HK-103X	C CAPACITOR				C 820	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V	
	C 638	NCB31HK-103X	C CAPACITOR				C 821	NCS31HJ-121X	C CAPACITOR		
	C 639	NCB31HK-103X	C CAPACITOR				C 822	NCS31HJ-821X	C CAPACITOR		
	C 640	NCF31CZ-104X	C CAPACITOR				C 824	NBE21AM-475X	TS E CAPACITOR		
	C 641	NBE41AM-226X	E CAPACITOR				C 825	NCB31HK-103X	C CAPACITOR		
	C 642	NCB31HK-103X	C CAPACITOR				C 826	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 643	NCB31HK-103X	C CAPACITOR				C 841	NCF31CZ-104X	C CAPACITOR		
	C 644	NDC31HJ-200X	C CAPACITOR				C 852	NCF21CZ-105X	C CAPACITOR		
	C 645	NDC31HJ-120X	C CAPACITOR				C 853	NCF21CZ-105X	C CAPACITOR		
	C 646	NCB31HK-682X	C CAPACITOR				C 860	NCF31CZ-104X	C CAPACITOR		
	C 647	NCB31HK-102X	C CAPACITOR				C 861	NDC31HJ-150X	C CAPACITOR		
	C 650	NCF31AZ-105X	C CAPACITOR				C 862	NDC31HJ-150X	C CAPACITOR		
	C 651	NCF31AZ-105X	C CAPACITOR				C 863	NCB31HK-103X	C CAPACITOR		
	C 652	NCF31CZ-104X	C CAPACITOR				C 864	NCF31CZ-104X	C CAPACITOR		
	C 653	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V			C 866	NCF31CZ-104X	C CAPACITOR		
	C 654	NBE41AM-226X	E CAPACITOR				C 876	NCB31HK-103X	C CAPACITOR		
	C 655	NCB31HK-103X	C CAPACITOR				C 878	NBE21AM-475X	TS E CAPACITOR		
	C 656	NBE41AM-226X	E CAPACITOR				C 901	NCB31CK-104X	C CAPACITOR		
	C 660	NCF31CZ-104X	C CAPACITOR				C 910	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V	
	C 669	NCF31CZ-104X	C CAPACITOR				C 911	NCB31EK-473X	C CAPACITOR		
	C 676	NCB31HK-223X	C CAPACITOR				C 912	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 677	NDC31HJ-100X	C CAPACITOR				C 913	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 678	NDC31HJ-150X	C CAPACITOR				C 914	NCB31HK-103X	C CAPACITOR		
	C 679	NCF31AZ-105X	C CAPACITOR				C 915	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 680	NBE21AM-106X	E CAPACITOR				C 916	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 686	NBE21AM-106X	E CAPACITOR				C 917	NCB31AK-224X	C CAPACITOR		
	C 687	NCF31CZ-104X	C CAPACITOR				C 921	NCB31HK-223X	C CAPACITOR		
	C 701	NDC31HJ-220X	C CAPACITOR				C 922	NCB31HK-223X	C CAPACITOR		
	C 702	NDC31HJ-270X	C CAPACITOR				C 923	NCB31HK-223X	C CAPACITOR		
	C 703	NDC31HJ-270X	C CAPACITOR				C 924	NCB31HK-223X	C CAPACITOR		
	C 704	NCS31HJ-8R0X	C CAPACITOR				C 925	NCB31HK-223X	C CAPACITOR		
	C 705	NCS31HJ-471X	C CAPACITOR				C 926	NCB31HK-223X	C CAPACITOR		
	C 707	NCB31HK-223X	C CAPACITOR				C 927	NCB31HK-223X	C CAPACITOR		
	C 708	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 928	NCB31HK-223X	C CAPACITOR		
	C 710	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V			C 931	NCB21HK-103X	C CAPACITOR		
	C 711	NCS31HJ-471X	C CAPACITOR				C 941	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 712	NCB31EK-473X	C CAPACITOR				C 942	NCB31AK-224X	C CAPACITOR		
	C 713	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V			C 943	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 719	NCS21HJ-471X	C CAPACITOR				C 944	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 721	NCB31CK-104X	C CAPACITOR				C 945	QERF1CM-226Z	E CAPACITOR	22MF 20% 16V	
	C 722	NCB31CK-104X	C CAPACITOR				C 946	NCB31CK-104X	C CAPACITOR		
	C 723	NCB31HK-103AY	C CAPACITOR				C 947	NCB31CK-104X	C CAPACITOR		
	C 724	NCB31HK-103AY	C CAPACITOR				C 948	NCB31CK-104X	C CAPACITOR		
	C 725	NCB31EK-473X	C CAPACITOR				C 949	NCB31CK-104X	C CAPACITOR		
	C 754	NCB31CK-104X	C CAPACITOR				C 951	NCB31CK-104X	C CAPACITOR		
	C 755	NCB31EK-473X	C CAPACITOR				C 952	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 771	NCB21EK-473X	C CAPACITOR				C 961	QEZ0337-228	E CAPACITOR	2200MF	
	C 791	QERF1HM-104Z	E CAPACITOR	0.1MF 20% 50V			C 962	QERF1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 803	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 964	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V	
	C 804	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V			C 965	QERF1AM-227Z	E CAPACITOR	220MF 20% 10V	
	C 805	NCB31HK-103X	C CAPACITOR				C 966	NCB31HK-103X	C CAPACITOR		
	C 806	NCB31HK-103X	C CAPACITOR				C 967	QERF1CM-226Z	E CAPACITOR	22MF 20% 16V	
	C 807	NCB31HK-103X	C CAPACITOR				C 968	NCB31CK-104X	C CAPACITOR		
	C 808	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 969	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 809	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V			C 971	QERF1CM-226Z	E CAPACITOR	22MF 20% 16V	
	C 811	NCS31HJ-121X	C CAPACITOR				C 972	NCB31CK-104X	C CAPACITOR		
	C 812	NCS31HJ-821X	C CAPACITOR				C 973	NCB31CK-104X	C CAPACITOR		
	C 814	NBE21AM-475X	TS E CAPACITOR				C 977	QERF1CM-476Z	E CAPACITOR	47MF 20% 16V	
	C 815	NCB31HK-103X	C CAPACITOR				C 978	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V	
	C 816	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V			C 982	QERF1CM-106Z	E CAPACITOR	10MF 20% 16V	

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■ **Electrical parts list (Main board)** **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	C 986	NCB21EK-104X	C CAPACITOR			⚠	IC604	M63008FP-X	IC		
	C 990	NCS31HJ-101X	C CAPACITOR				IC605	TC74VHC126FT-X	IC		
	C 991	NCS31HJ-101X	C CAPACITOR				IC606	UPD703031AGC014	IC		
	C 992	NCS31HJ-101X	C CAPACITOR				IC608	LB1830M-X	IC		
	C 993	NCS31HJ-101X	C CAPACITOR				IC701	UPD784215AGC160	IC		
	C 994	NCB31HK-102X	C CAPACITOR				IC702	IC-PST9333U-X	IC		
	C 995	NCB31HK-102X	C CAPACITOR				IC703	BR24C32F-X	IC		
	C 996	NCS31HJ-101X	C CAPACITOR				IC771	TC74VHC126FT-X	IC		
	C 997	NCS31HJ-101X	C CAPACITOR			⚠	IC801	NJM4580V-X	IC		
	C 998	NCS31HJ-101X	C CAPACITOR				IC802	PCM1716E-X	IC		
	CN301	QGA2501C1-07	7P CONNECTOR				IC803	TC74VHC157FT-X	IC		
	CN302	QGA2501C1-06	6P CONNECTOR				IC804	S-81332HG-KC-X	IC		
	CN601	QGB2027M2-26X	CONNECTOR				IC805	TC7WU04FU-X	IC		
	CN701	QGF0503F3-07X	CONNECTOR				IC806	MAS3507D-QG-G10	IC		
	CN702	QGF1034C1-20X	CONNECTOR				IC911	M61508FP-X	IC		
	CN703	QGA2501F1-02	CONNECTOR			⚠	IC941	TA8273H	IC		
	CN705	QGA2006C1-02	CONNECTOR				IC951	NJM4565V-X	IC		
	CN771	QNZ0095-001	CONNECTOR				IC961	HA13164	IC		
	CN901	QNZ0090-001	CAR CONNECTOR				J 1	QAM0105-002	CAR CABLE		
	D 1	1SS355-X	DIODE				L 1	NQL334J-4R7X	INDUCTOR		
	D 2	1SS355-X	DIODE				L 601	NQR0007-003X	FERRITE BEADS		
	D 11	MA152WK-X	SI DIODE				L 606	NQL114K-470X	INDUCTOR		
	D 111	MA152WK-X	SI DIODE				L 622	NQL56CK-220X	INDUCTOR		
	D 131	MA152WA-X	DIODE				L 701	NQL114K-470X	INDUCTOR		
	D 161	1SS355-X	DIODE				L 783	NQL013K-1R8X	CHIP INDUCTOR		
	D 162	1SS355-X	DIODE				L 784	NQL013K-1R8X	CHIP INDUCTOR		
	D 231	MA152WA-X	DIODE				L 851	NQR0007-003X	FERRITE BEADS		
	D 332	MA152WK-X	SI DIODE				L 852	NQR0007-003X	FERRITE BEADS		
	D 701	CRS03-W	SB DIODE				L 961	QQR1198-001	CHOKE COIL		
	D 702	1SS355-X	DIODE				PP 1	QZW0010-001	STYLE PIN		
	D 711	1SS355-X	DIODE				PP 2	QZW0010-001	STYLE PIN		
	D 721	UDZS6.2B-X	SI DIODE				Q 1	DTA114ESA-T	TRANSISTOR		
	D 722	UDZS6.2B-X	SI DIODE				Q 11	2SB815/7/-X	TRANSISTOR		
	D 723	UDZS6.2B-X	SI DIODE				Q 12	UN2211-X	TRANSISTOR		
	D 724	UDZS6.2B-X	SI DIODE				Q 13	2SB709A/R/-X	TRANSISTOR		
	D 725	UDZS6.2B-X	SI DIODE				Q 22	2SC2412K/R/-X	TRANSISTOR		
	D 726	UDZS6.2B-X	SI DIODE				Q 23	2SC2412K/R/-X	TRANSISTOR		
	D 727	UDZS6.2B-X	SI DIODE				Q 24	UN2211-X	TRANSISTOR		
	D 728	UDZS6.2B-X	SI DIODE				Q 32	UN2111-X	TRANSISTOR		
	D 729	UDZS6.2B-X	SI DIODE				Q 33	2SD601A/R/-X	TRANSISTOR		
	D 730	UDZS6.2B-X	SI DIODE				Q 34	UN2111-X	TRANSISTOR		
	D 754	UDZS6.2B-X	SI DIODE				Q 35	UN2111-X	TRANSISTOR		
	D 795	SML-310FT/JKL/X	LED				Q 51	2SB709A/R/-X	TRANSISTOR		
	D 796	SML-310FT/JKL/X	LED				Q 52	UN2211-X	TRANSISTOR		
	D 941	1SS355-X	DIODE				Q 81	2SD601A/R/-X	TRANSISTOR		
	D 942	1SS355-X	DIODE				Q 91	2SD601A/R/-X	TRANSISTOR		
⚠	D 961	1N5404-TU-15	DIODE				Q 131	2SD1048/6-7/-X	TRANSISTOR		
	D 962	CRS03-W	SB DIODE				Q 132	2SD1048/6-7/-X	TRANSISTOR		
	D 963	1SS355-X	DIODE				Q 161	2SD601A/R/-X	TRANSISTOR		
	D 964	CRS03-W	SB DIODE				Q 231	2SD1048/6-7/-X	TRANSISTOR		
	D 967	CRS03-W	SB DIODE				Q 232	2SD1048/6-7/-X	TRANSISTOR		
	D 978	UDZ11B-X	ZENER DIODE				Q 321	UN2211-X	TRANSISTOR		
	D 980	1SS355-X	DIODE				Q 322	UN2211-X	TRANSISTOR		
	D 986	MA152WA-X	DIODE				Q 323	2SD1048/6-7/-X	TRANSISTOR		
	IC 51	SAA6579T-X	IC				Q 636	2SB1197K/QR/-X	TRANSISTOR		
	IC171	NJM4565V-X	IC				Q 641	2SB1184/QR/-X	TRANSISTOR		
	IC301	BA3220FV-X	IC				Q 683	2SC4081/QR/-X	TRANSISTOR		
	IC322	BU4066BCFV-X	IC				Q 701	UN2211-X	TRANSISTOR		
	IC323	NJM4565V-X	IC				Q 755	UN2211-X	TRANSISTOR		
	IC401	BA3220FV-X	IC				Q 791	UN2211-X	TRANSISTOR		
⚠	IC601	LC895199K-ND2	IC				Q 941	UN2211-X	TRANSISTOR		
	IC602	IS41C16256-35T	IC				Q 942	UN2215-X	TRANSISTOR		
	IC603	UPD63711AGC	IC				Q 965	UN2213-X	TRANSISTOR		

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■ Electrical parts list (Main board)   Block No. 01

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	Q 966	2SB709A/R/-X	TRANSISTOR				R 166	NRSA63J-102X	MG RESISTOR		
	Q 977	UN2111-X	TRANSISTOR				R 167	NRSA63J-274X	MG RESISTOR		
	Q 979	UN2111-X	TRANSISTOR				R 172	NRSA63J-104X	MG RESISTOR		
	Q 983	2SD601A/R/-X	TRANSISTOR				R 173	NRSA63J-103X	MG RESISTOR		
	Q 986	UN2211-X	TRANSISTOR				R 174	NRSA63J-103X	MG RESISTOR		
	R 1	NRSA63J-473X	MG RESISTOR				R 175	NRSA63J-822X	MG RESISTOR		
	R 2	NRSA63J-393X	MG RESISTOR				R 176	NRSA63J-822X	MG RESISTOR		
	R 4	NRSA63J-330X	MG RESISTOR				R 177	NRSA63J-102X	MG RESISTOR		
	R 10	NRSA63J-220X	MG RESISTOR				R 178	NRSA63J-471X	MG RESISTOR		
	R 11	NRSA63J-220X	MG RESISTOR				R 211	NRSA63J-224X	MG RESISTOR		
	R 12	NRSA63J-473X	MG RESISTOR				R 218	NRSA63J-332X	MG RESISTOR		
	R 13	NRSA63J-472X	MG RESISTOR				R 219	NRSA63J-473X	MG RESISTOR		
	R 14	NRSA63J-473X	MG RESISTOR				R 220	NRSA63J-104X	MG RESISTOR		
	R 15	NRSA63J-332X	MG RESISTOR				R 231	NRSA63J-222X	MG RESISTOR		
	R 21	NRSA63J-473X	MG RESISTOR				R 232	NRSA63J-222X	MG RESISTOR		
	R 22	NRSA63J-393X	MG RESISTOR				R 233	NRSA63J-0R0X	MG RESISTOR		
	R 23	NRSA63J-103X	MG RESISTOR				R 234	NRSA63J-0R0X	MG RESISTOR		
	R 24	NRSA63J-222X	MG RESISTOR				R 235	NRSA63J-101X	MG RESISTOR		
	R 25	NRSA63J-103X	MG RESISTOR				R 236	NRSA63J-101X	MG RESISTOR		
	R 26	NRSA63J-103X	MG RESISTOR				R 237	NRSA63J-102X	MG RESISTOR		
	R 27	NRSA63J-471X	MG RESISTOR				R 238	NRSA63J-102X	MG RESISTOR		
	R 28	NRSA63J-473X	MG RESISTOR				R 241	NRSA63J-473X	MG RESISTOR		
	R 33	NRSA63J-472X	MG RESISTOR				R 242	NRSA63J-473X	MG RESISTOR		
	R 34	NRSA63J-4R7X	MG RESISTOR				R 243	NRSA63J-103X	MG RESISTOR		E
	R 51	NRSA63J-0R0X	MG RESISTOR				R 243	NRSA63J-823X	MG RESISTOR		EX
	R 52	NRSA63J-222X	MG RESISTOR				R 244	NRSA63J-823X	MG RESISTOR		EX
	R 53	NRSA63J-222X	MG RESISTOR				R 244	NRSA63J-103X	MG RESISTOR		E
	R 54	NRSA63J-222X	MG RESISTOR				R 245	NRSA63J-124X	MG RESISTOR		EX
	R 55	NRSA63J-473X	MG RESISTOR				R 245	NRSA63J-392X	MG RESISTOR		E
	R 56	NRSA63J-472X	MG RESISTOR				R 246	NRSA63J-392X	MG RESISTOR		E
	R 81	NRSA63J-103X	MG RESISTOR				R 246	NRSA63J-124X	MG RESISTOR		EX
	R 82	NRSA63J-273X	MG RESISTOR				R 272	NRSA63J-104X	MG RESISTOR		
	R 83	NRSA63J-472X	MG RESISTOR				R 273	NRSA63J-103X	MG RESISTOR		
	R 91	NRSA63J-103X	MG RESISTOR				R 274	NRSA63J-103X	MG RESISTOR		
	R 92	NRSA63J-273X	MG RESISTOR				R 275	NRSA63J-822X	MG RESISTOR		
	R 93	NRSA63J-472X	MG RESISTOR				R 276	NRSA63J-822X	MG RESISTOR		
	R 111	NRSA63J-224X	MG RESISTOR				R 277	NRSA63J-102X	MG RESISTOR		
	R 118	NRSA63J-332X	MG RESISTOR				R 301	NRSA63J-183X	MG RESISTOR		
	R 119	NRSA63J-473X	MG RESISTOR				R 302	NRSA63J-183X	MG RESISTOR		
	R 120	NRSA63J-104X	MG RESISTOR				R 303	NRSA63J-333X	MG RESISTOR		
	R 131	NRSA63J-222X	MG RESISTOR				R 304	NRSA63J-333X	MG RESISTOR		
	R 132	NRSA63J-222X	MG RESISTOR				R 305	NRSA63J-154X	MG RESISTOR		
	R 133	NRSA63J-0R0X	MG RESISTOR				R 325	NRSA63J-104X	MG RESISTOR		
	R 134	NRSA63J-0R0X	MG RESISTOR				R 327	NRSA63J-562X	MG RESISTOR		
	R 135	NRSA63J-101X	MG RESISTOR				R 328	NRSA63J-153X	MG RESISTOR		
	R 136	NRSA63J-101X	MG RESISTOR				R 329	NRSA63J-0R0X	MG RESISTOR		
	R 137	NRSA63J-102X	MG RESISTOR				R 330	NRSA63J-473X	MG RESISTOR		
	R 138	NRSA63J-102X	MG RESISTOR				R 331	NRSA63J-104X	MG RESISTOR		
	R 141	NRSA63J-473X	MG RESISTOR				R 332	NRSA63J-104X	MG RESISTOR		
	R 142	NRSA63J-473X	MG RESISTOR				R 333	NRSA63J-473X	MG RESISTOR		
	R 143	NRSA63J-103X	MG RESISTOR		E		R 334	NRSA63J-473X	MG RESISTOR		
	R 143	NRSA63J-823X	MG RESISTOR		EX		R 335	NRSA63J-821X	MG RESISTOR		
	R 144	NRSA63J-823X	MG RESISTOR		EX		R 336	NRSA63J-473X	MG RESISTOR		
	R 144	NRSA63J-103X	MG RESISTOR		E		R 337	NRSA63J-472X	MG RESISTOR		
	R 145	NRSA63J-124X	MG RESISTOR		EX		R 338	NRSA63J-101X	MG RESISTOR		
	R 145	NRSA63J-392X	MG RESISTOR		E		R 339	NRSA63J-101X	MG RESISTOR		
	R 146	NRSA63J-392X	MG RESISTOR		E		R 340	NRSA63J-0R0X	MG RESISTOR		
	R 146	NRSA63J-124X	MG RESISTOR		EX		R 341	NRSA63J-105X	MG RESISTOR		
	R 161	NRSA63J-473X	MG RESISTOR				R 342	NRSA63J-105X	MG RESISTOR		
	R 162	NRSA63J-123X	MG RESISTOR				R 343	NRSA63J-105X	MG RESISTOR		
	R 163	NRSA63J-184X	MG RESISTOR				R 344	NRSA63J-105X	MG RESISTOR		
	R 164	NRSA63J-223X	MG RESISTOR				R 351	NRSA63J-103X	MG RESISTOR		
	R 165	NRSA63J-391X	MG RESISTOR				R 352	NRSA63J-103X	MG RESISTOR		

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■ **Electrical parts list (Main board)**   **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	R 401	NRSA63J-183X	MG RESISTOR				R 662	NRSA63J-473X	MG RESISTOR		
	R 402	NRSA63J-183X	MG RESISTOR				R 663	NRSA63J-103X	MG RESISTOR		
	R 403	NRSA63J-333X	MG RESISTOR				R 664	NRSA63J-473X	MG RESISTOR		
	R 404	NRSA63J-333X	MG RESISTOR				R 670	NRSA63J-104X	MG RESISTOR		
	R 405	NRSA63J-154X	MG RESISTOR				R 676	NRSA63J-103X	MG RESISTOR		
	R 436	NRSA63J-473X	MG RESISTOR		E		R 677	NRSA63J-0R0X	MG RESISTOR		
	R 601	NRSA63J-332X	MG RESISTOR				R 678	NRSA63J-105X	MG RESISTOR		
	R 602	NRSA63J-151X	MG RESISTOR				R 679	NRSA63J-103X	MG RESISTOR		
	R 603	NRSA63J-103X	MG RESISTOR				R 680	NRSA63J-103X	MG RESISTOR		
	R 604	NRSA63J-103X	MG RESISTOR				R 681	NRSA63J-103X	MG RESISTOR		
	R 605	NRSA63J-201X	MG RESISTOR				R 682	NRSA63J-103X	MG RESISTOR		
	R 606	NRSA63J-752X	MG RESISTOR				R 683	NRSA63J-103X	MG RESISTOR		
	R 607	NRSA63J-100X	MG RESISTOR				R 684	NRSA63J-103X	MG RESISTOR		
	R 608	NRSA63J-100X	MG RESISTOR				R 685	NRSA63J-103X	MG RESISTOR		
	R 609	NRSA63J-100X	MG RESISTOR				R 686	NRSA63J-103X	MG RESISTOR		
	R 610	NRSA63J-100X	MG RESISTOR				R 687	NRSA63J-223X	MG RESISTOR		
	R 611	NRSA63J-100X	MG RESISTOR				R 688	NRSA63J-223X	MG RESISTOR		
	R 612	NRSA63J-100X	MG RESISTOR				R 689	NRSA63J-223X	MG RESISTOR		
	R 613	NRSA63J-100X	MG RESISTOR				R 690	NRSA63J-104X	MG RESISTOR		
	R 615	NRSA63J-0R0X	MG RESISTOR				R 691	NRSA63J-473X	MG RESISTOR		
	R 618	NRSA63J-0R0X	MG RESISTOR				R 693	NRSA63J-103X	MG RESISTOR		
	R 619	NRSA63J-103X	MG RESISTOR				R 694	NRSA63J-103X	MG RESISTOR		
	R 620	NRSA63J-103X	MG RESISTOR				R 695	NRSA63J-103X	MG RESISTOR		
	R 621	NRSA63J-393X	MG RESISTOR				R 696	NRSA63J-103X	MG RESISTOR		
	R 623	NRSA63J-0R0X	MG RESISTOR				R 701	NRSA63J-473X	MG RESISTOR		
	R 624	NRSA63J-153X	MG RESISTOR				R 703	NRSA63J-104X	MG RESISTOR		
	R 625	NRSA63J-622X	MG RESISTOR				R 705	NRSA63J-473X	MG RESISTOR		
	R 626	NRSA63J-683NY	MG RESISTOR				R 706	NRSA63J-222X	MG RESISTOR		
	R 627	NRSA63J-223X	MG RESISTOR				R 707	NRSA63J-472X	MG RESISTOR		
	R 628	NRSA63J-683NY	MG RESISTOR				R 708	NRSA63J-472X	MG RESISTOR		
	R 629	NRSA63J-752X	MG RESISTOR				R 709	NRSA63J-103X	MG RESISTOR		
	R 630	NRSA63J-752X	MG RESISTOR				R 710	NRSA63J-103X	MG RESISTOR		
	R 631	NRSA63J-104X	MG RESISTOR				R 711	NRSA63J-103X	MG RESISTOR		
	R 632	NRSA63J-0R0X	MG RESISTOR				R 713	NRSA63J-103X	MG RESISTOR		
	R 633	NRSA63J-103X	MG RESISTOR				R 714	NRSA63J-103X	MG RESISTOR		
	R 634	NRSA63J-333X	MG RESISTOR				R 715	NRSA63J-472X	MG RESISTOR		
	R 635	NRSA63J-105X	MG RESISTOR				R 716	NRSA63J-472X	MG RESISTOR		
	R 636	NRSA63J-220X	MG RESISTOR				R 717	NRSA63J-472X	MG RESISTOR		
	R 637	NRSA63J-220X	MG RESISTOR				R 718	NRSA63J-222X	MG RESISTOR		
	R 638	NRSA63J-0R0X	MG RESISTOR				R 719	NRSA63J-222X	MG RESISTOR		
	R 639	NRSA63J-123X	MG RESISTOR				R 720	NRSA63J-222X	MG RESISTOR		
	R 640	NRSA63J-0R0X	MG RESISTOR				R 721	NRSA63J-103X	MG RESISTOR		
	R 641	NRSA63J-103X	MG RESISTOR				R 722	NRSA63J-103X	MG RESISTOR		
	R 642	NRSA63J-303X	MG RESISTOR				R 723	NRSA63J-102X	MG RESISTOR		
	R 643	NRSA63J-0R0X	MG RESISTOR				R 724	NRSA63J-271X	MG RESISTOR		
	R 644	NRSA63J-103X	MG RESISTOR				R 725	NRSA63J-271X	MG RESISTOR		
	R 645	NRSA63J-103X	MG RESISTOR				R 728	NRSA63J-104X	MG RESISTOR		
	R 646	NRSA63J-103X	MG RESISTOR				R 729	NRSA63J-103X	MG RESISTOR		
	R 647	NRSA63J-103X	MG RESISTOR				R 730	NRSA63J-104X	MG RESISTOR		
	R 648	NRSA63J-103X	MG RESISTOR				R 731	NRSA63J-104X	MG RESISTOR		
	R 649	NRSA63J-103X	MG RESISTOR				R 732	NRSA63J-104X	MG RESISTOR		
	R 650	NRSA63J-223X	MG RESISTOR				R 733	NRSA63J-104X	MG RESISTOR		
	R 651	NRSA63J-104X	MG RESISTOR				R 734	NRSA63J-104X	MG RESISTOR		
	R 652	NRSA63J-334X	MG RESISTOR				R 735	NRSA63J-104X	MG RESISTOR		
	R 653	NRSA63J-101X	MG RESISTOR				R 736	NRSA63J-102X	MG RESISTOR		
	R 654	NRSA63J-223X	MG RESISTOR				R 738	NRSA63J-103X	MG RESISTOR		
	R 655	NRSA63J-104X	MG RESISTOR				R 739	NRSA63J-473X	MG RESISTOR		
	R 656	NRSA63J-101X	MG RESISTOR				R 745	NRSA63J-103X	MG RESISTOR		
	R 657	NRSA63J-334X	MG RESISTOR				R 746	NRSA63J-103X	MG RESISTOR		
	R 658	NRSA63J-223X	MG RESISTOR				R 751	NRSA63J-106X	MG RESISTOR		
	R 659	NRSA63J-103X	MG RESISTOR				R 754	NRSA63J-102X	MG RESISTOR		
	R 660	NRSA63J-331X	MG RESISTOR				R 755	NRSA63J-821X	MG RESISTOR		
	R 661	NRSA63J-104X	MG RESISTOR				R 757	NRSA63J-103X	MG RESISTOR		

■ Electrical parts list (Main board) Block No. 01

⚠	Item	Parts number	Parts name	Remarks	Area
	R 758	NRSA63J-103X	MG RESISTOR		
	R 761	NRSA63J-222X	MG RESISTOR		
	R 762	NRSA63J-222X	MG RESISTOR		
	R 763	NRSA63J-222X	MG RESISTOR		
	R 764	NRSA63J-222X	MG RESISTOR		
	R 765	NRSA63J-222X	MG RESISTOR		
	R 766	NRSA63J-222X	MG RESISTOR		
	R 767	NRSA63J-473X	MG RESISTOR		
	R 768	NRSA63J-103X	MG RESISTOR		
	R 770	NRSA63J-103X	MG RESISTOR		
	R 772	NRSA63J-473X	MG RESISTOR		
	R 773	NRSA63J-223X	MG RESISTOR		
	R 774	NRSA63J-101X	MG RESISTOR		
	R 775	NRSA63J-103X	MG RESISTOR		
	R 776	NRSA63J-104X	MG RESISTOR		
	R 777	NRSA63J-223X	MG RESISTOR		
	R 778	NRSA63J-101X	MG RESISTOR		
	R 779	NRSA63J-473X	MG RESISTOR		
	R 780	NRSA63J-223X	MG RESISTOR		
	R 781	NRSA63J-331X	MG RESISTOR		
	R 782	NRSA63J-104X	MG RESISTOR		
	R 791	NRSA02J-392X	MG RESISTOR		
	R 792	NRSA02J-392X	MG RESISTOR		
	R 793	NRSA02J-392X	MG RESISTOR		
	R 794	NRSA02J-392X	MG RESISTOR		
	R 795	NRSA02J-562X	MG RESISTOR		
	R 796	NRSA02J-472X	MG RESISTOR		
	R 797	NRSA02J-102X	MG RESISTOR		
	R 798	NRSA02J-102X	MG RESISTOR		
	R 811	NRSA63J-333X	MG RESISTOR		
	R 812	NRSA63J-123X	MG RESISTOR		
	R 813	NRSA63J-272X	MG RESISTOR		
	R 814	NRSA63J-223X	MG RESISTOR		
	R 815	NRSA63J-223X	MG RESISTOR		
	R 816	NRSA63J-223X	MG RESISTOR		
	R 817	NRSA63J-153X	MG RESISTOR		
	R 821	NRSA63J-333X	MG RESISTOR		
	R 822	NRSA63J-123X	MG RESISTOR		
	R 823	NRSA63J-272X	MG RESISTOR		
	R 824	NRSA63J-223X	MG RESISTOR		
	R 825	NRSA63J-223X	MG RESISTOR		
	R 826	NRSA63J-223X	MG RESISTOR		
	R 827	NRSA63J-153X	MG RESISTOR		
	R 830	NRSA63J-470X	MG RESISTOR		
	R 831	NRSA63J-470X	MG RESISTOR		
	R 832	NRSA63J-470X	MG RESISTOR		
	R 833	NRSA63J-101X	MG RESISTOR		
	R 834	NRSA63J-101X	MG RESISTOR		
	R 835	NRSA63J-101X	MG RESISTOR		
	R 836	NRSA63J-332X	MG RESISTOR		
	R 837	NRSA63J-332X	MG RESISTOR		
	R 838	NRSA63J-0R0X	MG RESISTOR		
	R 839	NRSA63J-0R0X	MG RESISTOR		
	R 840	NRSA63J-103X	MG RESISTOR		
	R 841	NRSA63J-0R0X	MG RESISTOR		
	R 842	NRSA63J-0R0X	MG RESISTOR		
	R 843	NRSA63J-0R0X	MG RESISTOR		
	R 844	NRSA63J-0R0X	MG RESISTOR		
	R 852	NRSA63J-100X	MG RESISTOR		
	R 853	NRSA63J-100X	MG RESISTOR		
	R 859	NRSA63J-471X	MG RESISTOR		
	R 860	NRSA63J-105X	MG RESISTOR		
	R 861	NRSA63J-103X	MG RESISTOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	R 862	NRSA63J-103X	MG RESISTOR		
	R 863	NRSA63J-103X	MG RESISTOR		
	R 864	NRSA63J-103X	MG RESISTOR		
	R 865	NRSA63J-103X	MG RESISTOR		
	R 866	NRSA63J-103X	MG RESISTOR		
	R 867	NRSA63J-103X	MG RESISTOR		
	R 868	NRSA63J-103X	MG RESISTOR		
	R 869	NRSA63J-103X	MG RESISTOR		
	R 870	NRSA63J-103X	MG RESISTOR		
	R 871	NRSA63J-103X	MG RESISTOR		
	R 872	NRSA63J-103X	MG RESISTOR		
	R 874	NRSA63J-103X	MG RESISTOR		
	R 876	NRSA63J-100X	MG RESISTOR		
	R 911	NRSA63J-222X	MG RESISTOR		
	R 912	NRSA63J-222X	MG RESISTOR		
	R 913	NRSA63J-100X	MG RESISTOR		
	R 922	NRSA63J-271X	MG RESISTOR		
	R 923	NRSA63J-271X	MG RESISTOR		
	R 924	NRSA63J-271X	MG RESISTOR		
	R 925	NRSA63J-271X	MG RESISTOR		
	R 926	NRSA63J-271X	MG RESISTOR		
	R 927	NRSA63J-271X	MG RESISTOR		
	R 928	NRSA63J-271X	MG RESISTOR		
	R 929	NRSA63J-271X	MG RESISTOR		
	R 930	NRSA63J-271X	MG RESISTOR		
	R 931	NRSA63J-102X	MG RESISTOR		
	R 932	NRSA63J-102X	MG RESISTOR		
	R 933	NRSA63J-102X	MG RESISTOR		
	R 941	NRSA63J-222X	MG RESISTOR		
	R 942	NRSA63J-273X	MG RESISTOR		E
	R 943	NRSA63J-102X	MG RESISTOR		
	R 944	NRSA63J-273X	MG RESISTOR		
	R 951	NRSA63J-103X	MG RESISTOR		
	R 954	NRSA63J-103X	MG RESISTOR		
	R 961	QRE142J-102X	C RESISTOR	1.0K 5% 1/4W	
	R 962	NRSA63J-912X	MG RESISTOR		
	R 963	NRSA63J-472X	MG RESISTOR		
	R 964	NRSA63J-103X	MG RESISTOR		
	R 965	NRSA63J-0R0X	MG RESISTOR		
	R 968	NRSA63J-102X	MG RESISTOR		
	R 970	NRSA63J-333X	MG RESISTOR		
	R 971	NRSA63J-104X	MG RESISTOR		
	R 975	NRSA63J-562X	MG RESISTOR		
	R 976	NRS181J-222X	MG RESISTOR		
	R 977	NRS181J-222X	MG RESISTOR		
	R 978	NRSA63J-104X	MG RESISTOR		
	R 984	NRSA63J-473X	MG RESISTOR		
	R 985	NRSA63J-103X	MG RESISTOR		
	R 986	NRSA63J-102X	MG RESISTOR		
	R 987	NRSA63J-473X	MG RESISTOR		
	R 999	NRSA63J-102X	MG RESISTOR		
	TH951	NAD0028-103X	THERMISTOR		
⚠	TU 1	QAU0203-001	TUNER PACK		
	X 51	QAX0263-001Z	CRYSTAL		
	X 601	QAX0599-002Z	CRYSTAL		
	X 602	QAX0659-001Z	CRYSTAL		
	X 603	QAX0413-001Z	CRYSTAL		
	X 701	QAX0617-001Z	CRYSTAL		
	X 702	QAX0401-001	CRYSTAL		
	X 801	QAX0660-001Z	CRYSTAL		

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■ **Electrical parts list (Front board)**   **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area	⚠	Item	Parts number	Parts name	Remarks	Area
	C 561	NBE20JM-475X	TS E CAPACITOR				R 507	NRSA63J-472X	MG RESISTOR		
	C 571	NCB31CK-104X	C CAPACITOR				R 508	NRSA63J-103X	MG RESISTOR		
	C 582	NCB31CK-104X	C CAPACITOR				R 509	NRSA63J-561X	MG RESISTOR		
	C 583	NCB31CK-104X	C CAPACITOR				R 510	NRSA63J-681X	MG RESISTOR		
	C 584	NCB31CK-104X	C CAPACITOR				R 511	NRSA63J-102X	MG RESISTOR		
	C 585	NBE21CM-475X	E CAPACITOR				R 512	NRSA63J-122X	MG RESISTOR		
	C 586	NCB31HK-681X	C CAPACITOR				R 513	NRSA63J-182X	MG RESISTOR		
	C 587	NBE20JM-475X	TS E CAPACITOR				R 514	NRSA63J-272X	MG RESISTOR		
	C 588	NBE20JM-475X	TS E CAPACITOR				R 515	NRSA63J-472X	MG RESISTOR		
	C 595	NCB31HK-472X	C CAPACITOR				R 521	NRSA63J-222X	MG RESISTOR		
	C 596	NCB31HK-472X	C CAPACITOR				R 522	NRSA63J-122X	MG RESISTOR		
	C 597	NCB31CK-473X	C CAPACITOR				R 523	NRSA63J-122X	MG RESISTOR		
	CN501	QGZ2201L1-16	CONNECTOR				R 524	NRSA63J-122X	MG RESISTOR		
	CN503	QGA1501F2-03W	CONNECTOR				R 525	NRSA63J-182X	MG RESISTOR		
	CN504	QGF0503F3-07X	CONNECTOR				R 526	NRSA63J-122X	MG RESISTOR		
	CN505	QGF1013F1-20X	CONNECTOR				R 527	NRSA63J-122X	MG RESISTOR		
	CN511	QGZ2201M1-16	CONNECTOR				R 528	NRSA63J-821X	MG RESISTOR		
	CN512	WJT0056-001A	E-CARD WIRE				R 529	NRSA63J-222X	MG RESISTOR		
	CN513	WJK0017-001A	ASSY WIRE				R 531	NRSA63J-222X	MG RESISTOR		
	D 501	SML-310LT/MN/-X	LED				R 532	NRSA63J-122X	MG RESISTOR		
	D 502	SML-310LT/MN/-X	LED				R 533	NRSA63J-122X	MG RESISTOR		
	D 503	SML-310LT/MN/-X	LED				R 534	NRSA63J-122X	MG RESISTOR		
	D 504	SML-310LT/MN/-X	LED				R 535	NRSA63J-182X	MG RESISTOR		
	D 505	SML-310LT/MN/-X	LED				R 536	NRSA63J-122X	MG RESISTOR		
	D 506	SML-310LT/MN/-X	LED				R 537	NRSA63J-122X	MG RESISTOR		
	D 507	SML-310LT/MN/-X	LED				R 538	NRSA63J-821X	MG RESISTOR		
	D 508	SML-310LT/MN/-X	LED				R 539	NRSA63J-222X	MG RESISTOR		
	D 510	SML-310LT/MN/-X	LED				R 540	NRSA63J-332X	MG RESISTOR		
	D 511	SML-310LT/MN/-X	LED				R 541	NRSA63J-821X	MG RESISTOR		
	D 512	SML-310LT/MN/-X	LED				R 542	NRSA63J-821X	MG RESISTOR		
	D 513	SML-310LT/MN/-X	LED				R 543	NRSA63J-821X	MG RESISTOR		
	D 514	SML-310LT/MN/-X	LED				R 544	NRSA63J-561X	MG RESISTOR		
	D 515	SML-310LT/MN/-X	LED				R 545	NRSA63J-223X	MG RESISTOR		
	D 516	SML-310LT/MN/-X	LED				R 546	NRSA63J-222X	MG RESISTOR		
	D 517	SML-310LT/MN/-X	LED				R 547	NRSA63J-561X	MG RESISTOR		
	D 518	CL-190UB-X-X	LED				R 551	NRSA63J-821X	MG RESISTOR		
	D 519	CL-190UB-X-X	LED				R 552	NRSA63J-821X	MG RESISTOR		
	D 520	SML-310LT/MN/-X	LED				R 553	NRSA63J-821X	MG RESISTOR		
	D 540	MA152WK-X	SI DIODE				R 561	NRSA63J-103X	MG RESISTOR		
	D 541	NSPW310BS/BRS/	LED				R 562	NRSA63J-470X	MG RESISTOR		
	D 542	NSPW310BS/BRS/	LED				R 563	NRSA63J-332X	MG RESISTOR		
	D 543	NSPW310BS/BRS/	LED				R 564	NRSA63J-332X	MG RESISTOR		
	D 571	1PS226-X	CHIP DIODE				R 565	NRSA63J-332X	MG RESISTOR		
	D 572	1PS226-X	CHIP DIODE				R 571	NRSA63J-471X	MG RESISTOR		
	D 573	1PS226-X	CHIP DIODE				R 572	NRSA63J-471X	MG RESISTOR		
	D 574	1SS355-X	DIODE				R 581	NRSA63J-0R0X	MG RESISTOR		
	D 575	UDZS5.1B-X	ZENER DIODE				R 582	NRSA63J-0R0X	MG RESISTOR		
	D 581	RSA6.1EN-W	ZENER DIODE				R 583	NRSA63J-0R0X	MG RESISTOR		
	D 582	RSA6.1EN-W	ZENER DIODE				R 586	NRSA63J-823X	MG RESISTOR		
	D 583	UDZS6.2B-X	SI DIODE				R 592	NRSA63J-473X	MG RESISTOR		
	D 592	UDZS6.2B-X	SI DIODE				R 593	NRSA63J-473X	MG RESISTOR		
	EN591	QSW0915-001	ROTARY ENCODER				R 595	NRSA63J-473X	MG RESISTOR		
	IC501	LC75878W	IC				R 596	NRSA63J-473X	MG RESISTOR		
	IC561	RPM6938-SV4	IC				R 597	NRSA63J-471X	MG RESISTOR		
	PJ501	QNS0145-001	3.5 JACK				S 501	NSW0066-001X	TACT SWITCH		
	Q 541	DTC114EKA-X	TRANSISTOR				S 502	NSW0066-001X	TACT SWITCH		
	Q 542	2SB815/7/-X	TRANSISTOR				S 503	NSW0066-001X	TACT SWITCH		
	R 501	NRSA63J-561X	MG RESISTOR				S 504	NSW0066-001X	TACT SWITCH		
	R 502	NRSA63J-681X	MG RESISTOR				S 505	NSW0066-001X	TACT SWITCH		
	R 503	NRSA63J-102X	MG RESISTOR				S 506	NSW0066-001X	TACT SWITCH		
	R 504	NRSA63J-122X	MG RESISTOR				S 507	NSW0066-001X	TACT SWITCH		
	R 505	NRSA63J-182X	MG RESISTOR				S 508	NSW0066-001X	TACT SWITCH		
	R 506	NRSA63J-272X	MG RESISTOR				S 509	NSW0066-001X	TACT SWITCH		

3-14

■ **Electrical parts list (Front board)** **Block No. 02**

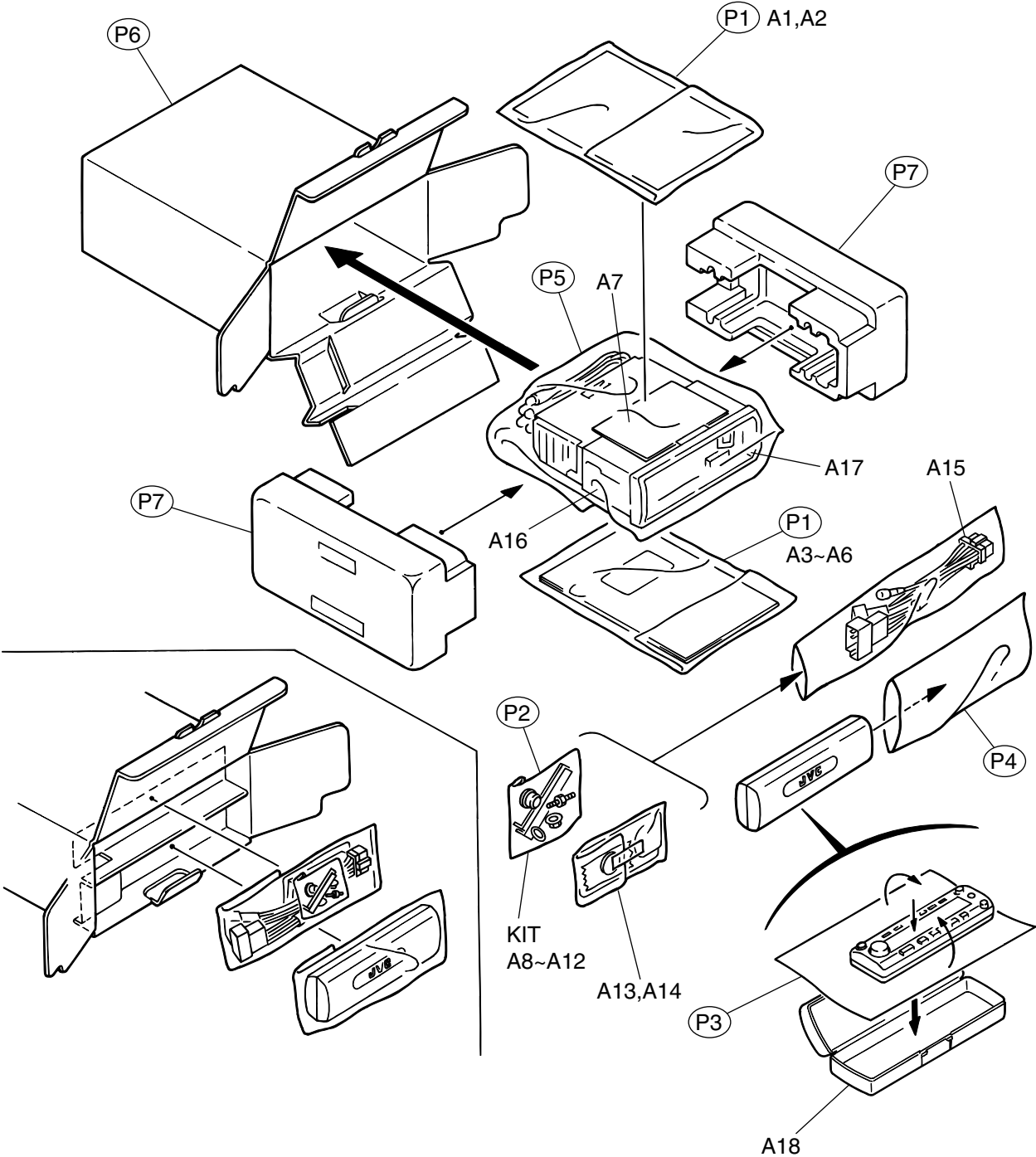| ⚠	Item	Parts number	Parts name	Remarks	Area
	S 510	NSW0066-001X	TACT SWITCH		
	S 511	NSW0066-001X	TACT SWITCH		
	S 512	NSW0066-001X	TACT SWITCH		
	S 513	NSW0066-001X	TACT SWITCH		
	S 514	NSW0066-001X	TACT SWITCH		
	S 515	NSW0066-001X	TACT SWITCH		
	S 516	NSW0066-001X	TACT SWITCH		
	S 517	NSW0066-001X	TACT SWITCH		
	S 518	NSW0066-001X	TACT SWITCH		
	S 591	NSW0146-001X	DETECT SWITCH		
	S 592	NSW0146-001X	DETECT SWITCH		
	S 593	NSW0146-001X	DETECT SWITCH		
	S 594	NSW0146-001X	DETECT SWITCH		
	S 595	NSW0146-001X	DETECT SWITCH		
	S 596	NSW0146-001X	DETECT SWITCH		

MC-Service

Packing materials and accessories parts list

Block No. Ⓜ ③ Ⓜ Ⓜ
Block No. Ⓜ ④ Ⓜ Ⓜ

P6

P1 A1,A2

P7

P5 A7

A17

A15

P7

A16

P1
A3~A6

P4

P2

KIT
A8~A12

A13,A14

P3

A18

■ **Parts list (Packing)**   **Block No. M3MM**

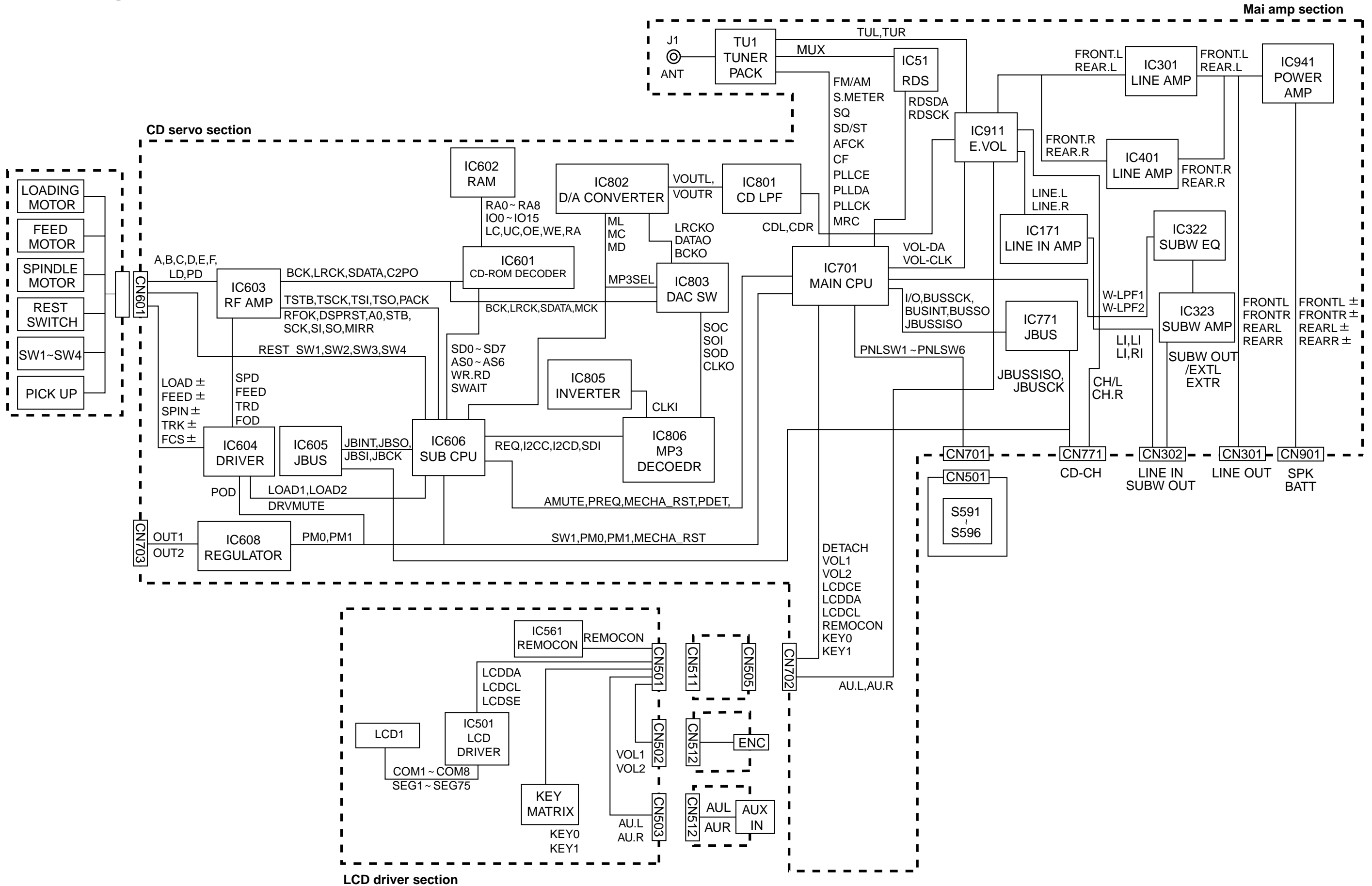| ⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	QPA01703505P	POLY BAG	2	INSTRUCTIONS	
	P 2	QPA00801205	POLY BAG	1	KIT	
	P 3	FSYH4036-068	SHEET	1		
	P 4	QPA01003003	POLY BAG	1	HARD CASE	
	P 5	VPE3005-064	POLY BAG	1	SET	
	P 6	LV32617-001A	CARTON	1		
	P 7	LV10466-001A	CUSHION	2		

■ **Parts list (Accessories)**   **Block No. M4MM**

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	LVT0655-001A	INSTRUCTIONS	1	ENG,GER,FRE,DUT	
	A 2	BT-54013-2	W.CARD	1		
	A 3	LVT0657-001A	INSTRUCTIONS	1	SPA,ITA,SWE,FIN	E
	A 4	LVT0658-001A	INST MANUAL	1	ENG,GER,FRE,DUT	
		LVT0659-001A	INST MANUAL	1	SPA,ITA,SWE,FIN	E
	A 5	LV42487-001A	CAUTION SHEET	1		
	A 6	LVT0770-002A	TROUBLE SHEET	1		
	A 7	LV40978-001A	CAUTION SHEET	1		
	A 8	VKZ4027-202	PLUG NUT	1		
	A 9	VKH4871-001SS	MOUNT BOLT	1		
	A 10	VKZ4328-001	LOCK NUT	1		
	A 11	WNS5000Z	WASHER	1		
	A 12	FSKL4010-002	HOOK	2		
	A 13	RM-RK100	REMOCON	1		
	A 14	QAB0014-001	BATTERY	1		
	A 15	QAM0106-001	CAR CABLE	1		
	A 16	FSKM2004-003	MOUNTING SLEEVE	1		
	A 17	LV20938-002A	TRIM PLATE	1		
	A 18	LV32577-001A	HARD CASE ASSY	1		
	KIT	KDGS717K-SCREWI	SCREW PARTS KIT	1	A8-A12	

MC-Service

Block diagram

Mai amp section

Standard schematic diagrams

■ **Main amp section**
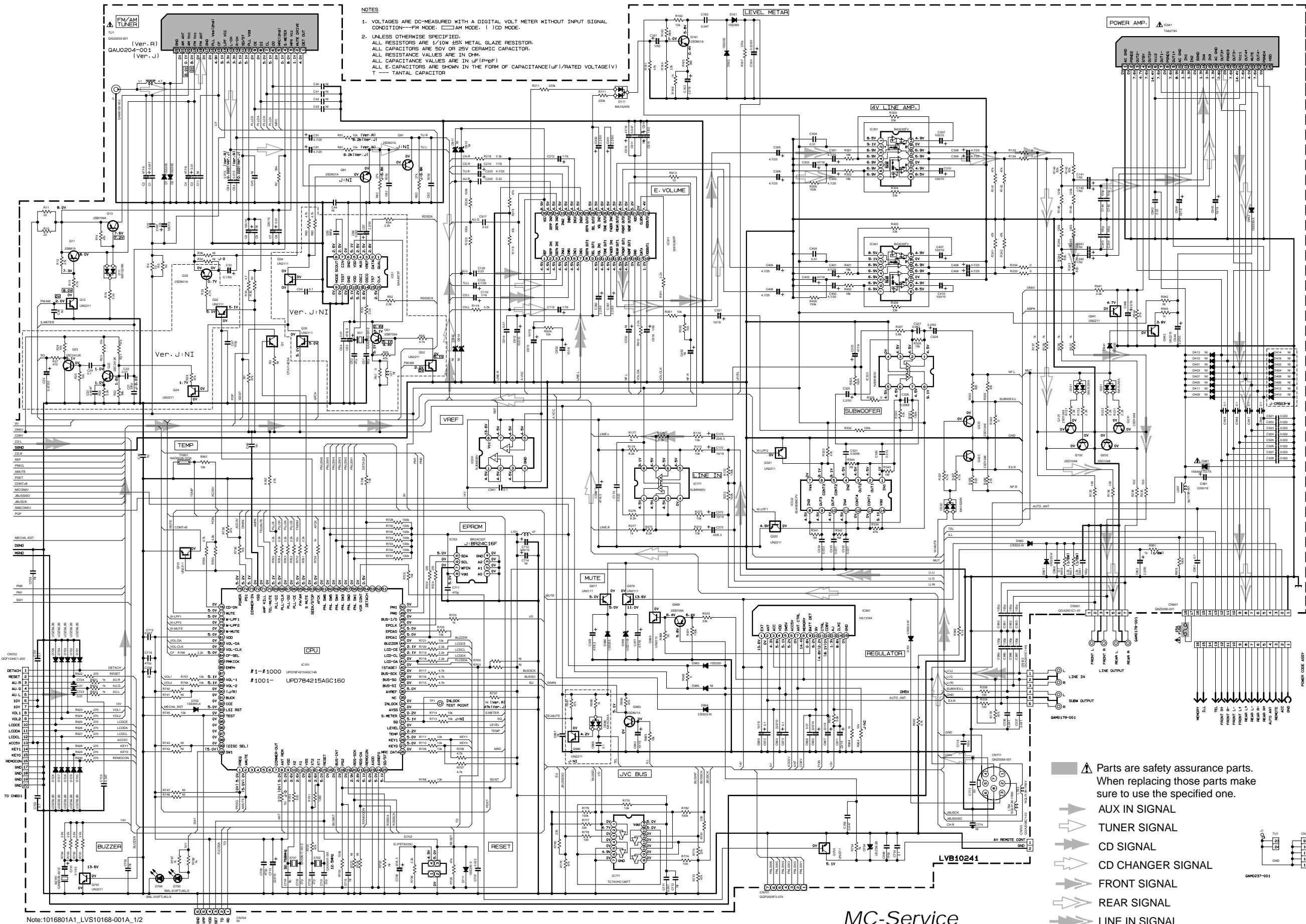
NOTES:
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION---FM MODE. ☐ AM MODE. ( )CD MODE.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF(P=pF)
   ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
   T --- TANTAL CAPACITOR

⚠️ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

AUX IN SIGNAL
TUNER SIGNAL
CD SIGNAL
CD CHANGER SIGNAL
FRONT SIGNAL
REAR SIGNAL
LINE IN SIGNAL

MC-Service

LVB10241

Note:1016801A1_LVS10168-001A_1/2

2-2

■**CD servo control section**

MECHA

PICK UP KSS-710A

DRIVER

CD L.P.F.

NOTES

1- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL
   CONDITION —— CD MODE.

2- UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF(P=pF)
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
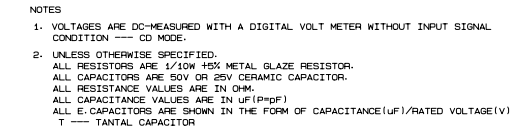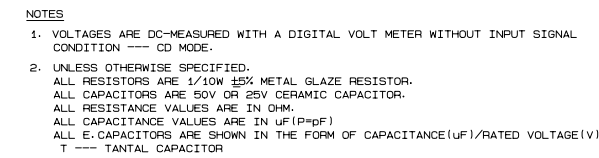   T —— TANTAL CAPACITOR

MC-Service

⚠ Parts are safety assurance parts.
When replacing those parts make
sure to use the specified one.

CD SIGNAL

MP3 SIGNAL

Note:1016801A2_LVS10168-001A_2/2
MP3

A   B   C   D   E   F   G

■LCD driver section

LCD DRIVER
IC501
LC75878W

LVB10240   DISPLAY PANEL

LCD
LCD01
QLD016B-001

REMOCON
IC501
RPM6838-V4

BACK LIGHT

RESET

AUX IN

AUX IN SIGNAL

MC-Service

NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL
   CONDITION --- CD MODE.

2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF(P=pF)
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
   T --- TANTAL CAPACITOR

SELECT   2/MONO   3/LOCAL   4/INT   5/RPT   6/RND   UP   ANGLE/ATT

DISP   DOWN   MODE/BAND   PTY   TP   EQ   SOURCE/POWER   EJECT

Note:1016802A_LVS10168-002A_1/1

Note:1016802A_LVS10168-002A_1/1

■**Tuner pack section**

TUNER PACK

QAU0203-001

IC1
LA17000M

Q1 :ST194or3SK263or3SK195
Q2 :2SK536
Q3-4 :DTC143E
Q5 :FC1BorHN3G01JorCPH5902
D1-2 :RN739F
D3-5 :BB804orSVC220orKV1440
D6 :HVU202
CF1 :MCMU2-912A01orCSB912JF108
CF2-3 :FFE1070MS10orSFE10.7MS3
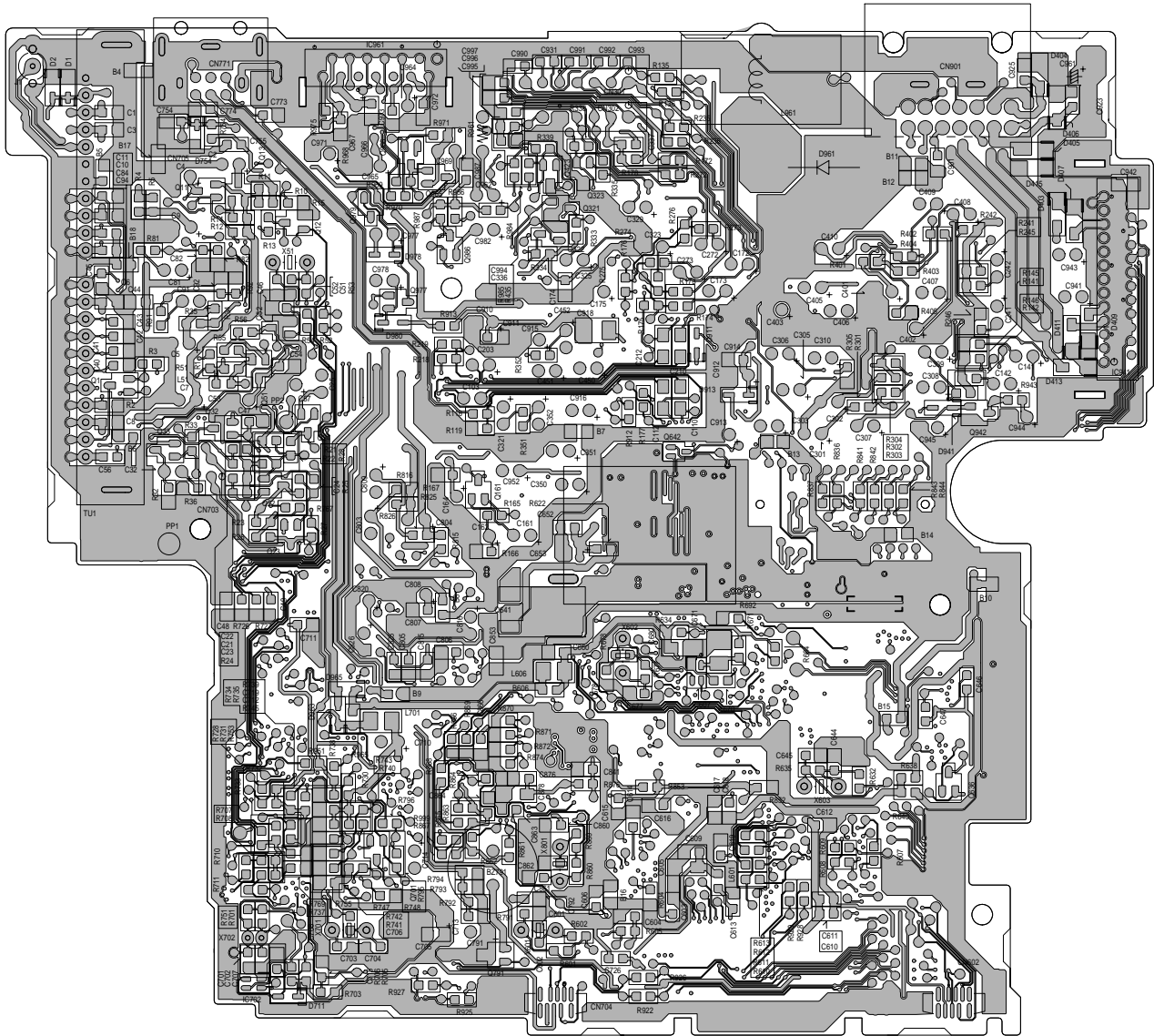CF4 :AHCFM2-450
CF5 :FFE1070MS61orSFE10.7MS3
CF6 :SFE10.7MTE

MC-Service

Printed circuit boards

■ Main board
(Forward side)

■ Main board
(Reverse side)

Note:/d4/n/lvb10241/001a/10241
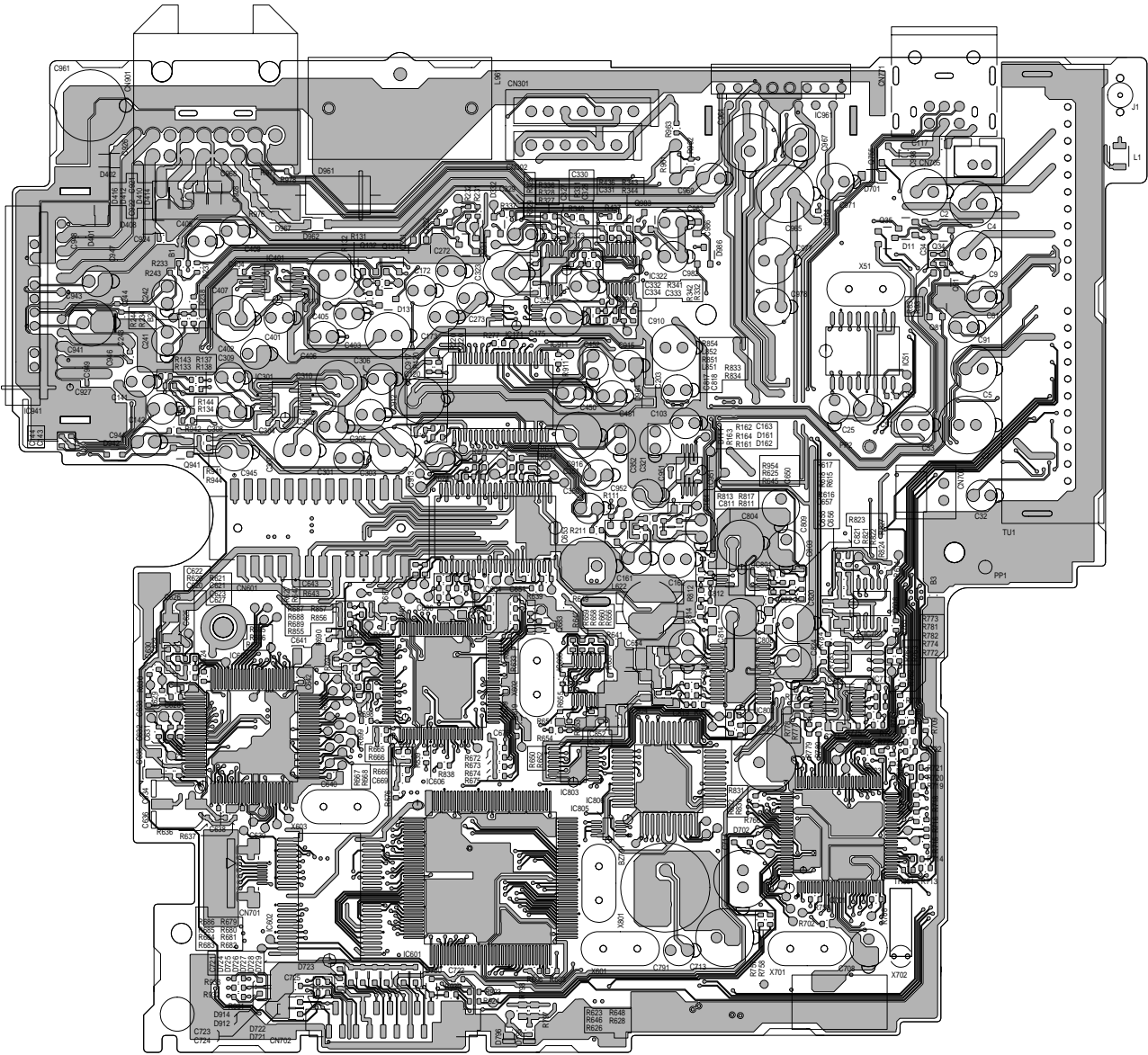
Note:/d4/n/lvb10241/001a/10241

MC-Service

■ **Front board**
 (Forward side)

5

4

3

2

1

EN591

CN504
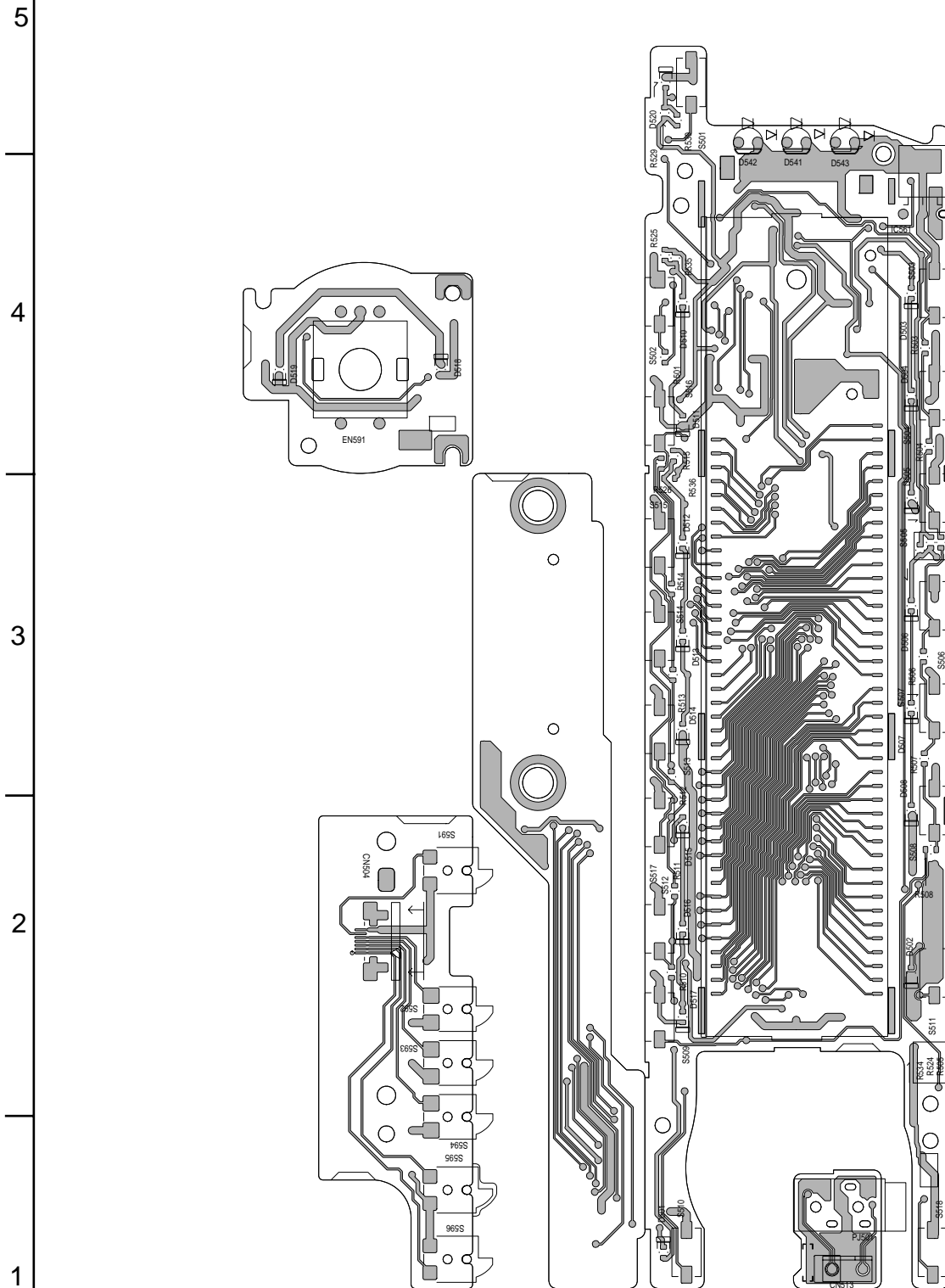
MC-Service

**■ Front board
(Reverse side)**

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